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SOCIAL INSTITUTIONS

Special Sahelian Office

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The Problem:

Policy makers and scientists have been so frustrated in their attempts to induce social and cultural changes in West Africa that they fatalistically greet news of each new failure with the acronym: "WAWA" (West Africa Wins Again). Implicit or explicit in this symbol is the notion or fear that nothing can induce the people of this region to change their "hide-bound" traditions. That this idea is patently false is obvious to anyone (including the exponents of WAWA) visiting the region. Contemporary West Africa is characterized by new towns, revitalized old towns, harbors, roads, schools, hospitals, churches, radio-TV stations and local imitators of James Brown. Nevertheless, belief in WAWA persists and, worst of all, few attempts are made to understand West African societies and to deal effectively with them.

The major reason for failure in attempts at social engineering in Africa, as elsewhere, is a lack of understanding and appreciation for the efficacy and resiliency of the traditional social institutions of the societies involved. Social institutions (defined as highly patterned behavioral activities of human groups living in and exploiting specific environments) are valued by people because they have usually stood the test of time, and have proven their efficacy. Institutions emerge as a result of a dynamic interaction between man and his environment and people come to regard them as the sole basis of social life. Social institutions 1) permit people to cooperate and 2) function to maintain socio-cultural and biological continuity; these institutions are sustained by ideological charters, technical paraphernalia, specialized vocabularies, and symbols.

Although hallowed by time and function, the social institutions of all human societies do change. Changes occur in response to micro and macro modification in the total ecosystem in which they are embedded. Any change in the environmental, biological or societal sub-systems of an ecosystem, (defined as a dynamic interrelationship between a human society and plant and animal species within a specific physical environment) affects the social institutions of the societal subsystem. Under ordinary circumstances, the component parts or subsystems of an ecosystem adapt or adjust to small changes within a range of tolerance, or perturbations which exceed that range within its component parts or subsystems. If and when an ecosystem's subsystems change, the nature of their relationships to other subsystems within the total ecosystem are modified and the boundaries of the total system are re-organized. For example, if the population of a society in an ecosystem increases, this may engender changes in the other subsystems such as a greater use of the biota for food, and/or a wider distribution of the population over the landscape. This will in turn affect both the biota on which humans live and change the physical environment. Such changes are normally so slow that people scarcely realize that their social institutions or their total ecosystems are changing. This is especially true of people who live in small-scale non-industrialized societies and value continuity rather than change.

More severe changes deriving externally, but impinging upon an ecosystem, may modify the linkages between its subsystems and may change the subsystems; in either case the total ecosystem is reorganized. For example, if there is a drought or famine in a certain ecosystem, its human population may have to migrate to other areas, or to develop social institutions and ideological mechanisms for distributing the now scarcer food resources. If this happens, then the ecosystem changes, but it also survives. In other words, except under extreme pressure, ecosystems tend to exhibit an equilibrium of sorts, even though they are transformed over time.

Ecosystems can break down or be destroyed when their subsystems cannot adapt to, or are prevented from, adapting to radical changes. Under conditions of "take-over" when one ecosystem becomes incorporated into another, larger system, the coherence of the former system is often disintegrated and that system may even disappear. An example of such system behavior is military conquest accompanied by the seizure of the territory the appropriation of its food resources, and the subjugation or destruction of its population. If for any reason the conquerors do not appropriate the land of their victims, seize all of their food resources, or destroy all of their people, the original ecosystem may recover. But it is doubtful whether it would return to its pristine form. This would be especially difficult if the conquerors were able to control the relation of the reviving ecosystem to a now enlarged ecosystem.

Natural disasters and pestilences can also cause the breakdown or destruction of ecosytems. A society's habitat can be disrupted by the forces of nature, human beings, animals or plants, and this disruption can cause ecosystem failure. Such an occurence would be predicted if the human beings are unable to leave the threatened area, or if for ideological reasons they refuse to migrate from a doomed area. The spread of virulent diseases within a biological subsystem, among plants, animals, or human beings, can also cause the destruction of ecosystems when the biota cannot leave its environment or utilize other mechanisms to deal with the diseases. If people leave environments threatened by the forces of nature, man or animals, vacate areas threatened by pestilence, or find means for combatting the diseases, then their ecosystems might persist. But here, again,the surviving ecosystem would be different from the pristine one, and because of its experience, systemic reorganization may be expected.

Natural and social disasters often reveal (that is, if the ecosystem is not immediately destroyed) the way in which the various components of an ecosystem are linked together: which ones are more viable, or vulnerable;

and, hopefully, how the ecosystem could be changed if it is to survive. An examination of an ecosystem under pressure may reveal for instance, that the habitat is being destroyed by an unrecognized increase of wild or cultivated species of animals or plants, thus depriving the human populations of sustenance. It may then be possible to correct this condition by man intervening either to halt the increase of the other biota, or to change his relationship with other biota and the habitat. Increasing dessication of the land, due to uncontrollable climatic changes may also be discovered as the reason for problems in an ecosystem. In this case, man can change his food resources, modify his technology, or leave the area. Here, the necessity is for human beings, the most active entities in an ecosystem, to modify the links between the subsystems in order to maintain viability of their social subsystem and the ecosystem.

The major problem facing social engineers in the face of ecosystem breakdown is the complexity and difficulty of changing a societal subsystem with its manifold human groups, organized in various ways and possessing different values. Neither small-scale under-developed societies nor large-scale industrialized societies willingly accept change under normal circumstances. In fact,they resist change. Nevertheless, societies are more prone to accept change when disasters are experienced and interpreted to mean that their social institutions are no longer viable in the particular ecosystem. Only then are societies willing to permit the development of, or use of alternate institutions to cope with the predicament. Even then when presented with radical imperatives to change, people in all societies either balk or attempt to return to their previous social state as rapidly as possible. Sometimes, small social groups may even attempt to maintain a "steady state" by migrating or by adapting in a superficial way, so that they could maintain their previous life. Not being able to do so is often viewed by them as a form of social death. Large-scale industrialized societies often react in the same way. Faced with unacceptable changes in their social

institutions people in these societies often flee, resist and often consider it better to face death or the destruction of their societies rather than accept change.

Social engineers must not only take into consideration the nature of social institutions of the societies they are attempting to change, but should attempt to discover how these institutions have reacted to stresses over time. They must seek to discover how the social institutions of these societies link up with the techno-environmental sub-systems of their ecosystems, since it is most often these aspects which are the basic imperative to change. They must also recognize that if possible, societies under stress, attempt to regain their old equilibrium. If the belief is that such a move would only lead to recurrent crises, then an effort should be made to discover the types of new behavior patterns (if not institutions) which emerged during the period of stress, and to support these in the hope that they might turn out to be more adaptive than the previous institutions to the new conditions. This is not always easy to do because the new institutions might not be recognized for what they are or they may have forms that are quite surprising. Yet this, too, should be expected since social change is normally multi-dimensional, and leads to serendipitous results. Lastly, social engineers must be prepared to accept the possibility that the techniques they may use to effect change may modify the environment in such a way that the specific changes sought may not be realized.

The Physical Background:

Many of the root causes of the Sahelian drought are to be found in the physical characteristics of this region.[1] Geographical factors, climatic fluctuations, natural vegetation, and species of wildlife provide the arena in which man attempts to make a living. The three distinct climatic zones (the Sudan, the Sahel and the Sahara) affected by the disaster encompasses some 965,000 square miles and are inhabited by about 25 million people. Stretching across the continent from west to east, these zones straddle national boundaries and include all or part of the following countries: Mauritania, Senegal, Gambia, Mali, Upper Volta, Niger and Chad.

Most of this area is a plateau some 500 to 1000 feet above sea level, lying between 12 and 20 degrees north latitude and between 25 east and 18 west longitude. The most severely stricken areas fall between latitudes 13 degrees and 17 degrees north. With respect to climate, the zone lies within the 600 mm and 100 mm isoheytal lines. It rains only during one relatively short period of the year extending from May-June to September-October with maximum precipitation expected in August. Even during the rainy season, however, there are periods of dryness. In general, the rain falls in brief, violent storms which deliver from 10" to 60" a year according to the region.

The long, grueling dry season ordinarily lasts from 7 to 10 months during a part of which the Harmattan, a sandy east-west wind blows. This dry season is divided into cold and hot periods, with temperatures falling as low as 9 degrees C (48 degrees F) in December and January and rising to 45 degrees C (113 degrees F) in April. Once the rains have stopped, almost everything dries up, including vegetation and surface water and the humidity drops rapidly to zero.

Although the general picture is one of an arid zone punctuated only by a brief period of life-giving rain, the Sudano-Sahelian region is not void of

hydraulic resources. Its water networks include the Niger river, the Senegal river, the Volta rivers and the Lake Chad system. Most important, however, are the underground water sources, tapped by foggaras and wells, which sustain life in those areas far from the shores of lakes and rivers.

Viewed in closer detail, the Sudan, the Sahel and the Sahara possess the following characteristics:

The Sudanese Zone

Lying just north of the tropical rain forests is the Sudanese or Savannah zone, forming a belt across the continent. It is about 400 miles wide on the western coast and expands to more than 600 miles in the Lake Chad area.

This zone is characterized by tall elephant grass, a dense cover of brush, a wide variety of wildlife, and over 370 different species of trees. It is both the most densely populated and widely cultivated region of West Africa. Annual rainfall here averages from 60 inches in the southern portion to 24 inches in the North and the rainy season last from 6 months in the South to 4 months in the North. The staple crops of this area are the millets and sorghums, but the farmers also cultivate corn, yams, manioc, peanuts, tobacco, rice, and cotton as the main commercial crops. The height of the brush cover, makes much of the area unsuitable for grazing, but pastoralist populations possessing cattle, goats and sheep are also found in this area, especially during the dry season.

Most Sudanese cultivators use the slash and burn technique. It is a cycle of shifting cultivation whereby the brush is burnt; its ashes used to fertilize the soil; a particular spot is used for 2 or 3 years; and then the farmers move on to begin the cycle again on new land. This practice is a time-honored method for fertilizing poor soils, but the results are marginal, as well as ephemeral. In the past, low population densities enabled the people to bring new land under cultivation when necessary, but this is now difficult if not impossible

The slash and burn method or swidden agriculture is probably no longer congruent with the total ecosystem realities of the Sudan.

The Sahel:

Moving north from the Sudanese belt, the soil becomes more sandy and the vegetation changes. Trees are reduced to only a few drought-resistant species, and the tall grass of the Savannah is replaced by short grasses like the cram-cram.

The Sahel is hot and dry. Its yearly average rainfall is less than 24" all of which is concentrated in a period of 2 to 3 months. Yet, it is during this short, rainy season that both food and cash crops are planted, and water resources are replenished to serve both man and animals. The combination of a low level of precipitation and a long dry season make the Sahel agriculturally marginal. Peasant farmers usually manage to grow enough millet and other cereals for subsistence and peanuts for export. But the difference betwen full graneries and famine often rests on a thin margin of 2 or 3 rainfalls. On the other hand, the extensive grasslands of the Sahel are well suited to herding. Moreover, the higher altitude and arid climate eliminate the deadly tse-tse fly and other insect pests which attack livestock in the more humid areas. Consequently, the Sahelian zone supports large herds of cattle, goacs and sheep, as well as large numbers of horses and donkeys. But the paucity of rainfall forces the herdsmen (mainly Arabs, Fulani, Tuaregs and Moors) to lead a nomadic existence, constantly searching for new pastures and watering points.

The Sahara:

The Sahara zone just north of the Sahel is the world's largest desert. Here the average annual rainfall is less than 4 inches, and some areas have no rain for several years. The average annual temperature is 98 degrees F, with the

thermometer sometimes climbing as high as 125 degrees F. Because of these characteristics the Sahara only marginally supports human life. Cultivators produce a small quantity of dates and cereals in its widely separated oases, and camel herders wander with their hardy animals and small herds of sheep and goats, between the oases and watering points.

History:

The Sahel-Sudan region of Western Africa has been the scene of one of the most exciting and tragic chapters in the history of Africa.[2] This region spawned politico-religious movements that conquered North Africa and Spain and was later, itself, to be subdued by the expanding Europeans. Now once again independent, the peoples of this region are battling severe climatic, demographic, economic, political and social problems as they attempt to build modern nations-states in the contemporary world.

Engravings on stones and an abundance of hand-axes, blades, microliths and fish hooks, found along the now bone-dry wadis and valleys in the Northern Sahel, attest to the presence of early man in a Sahara which was once lush with vegetation from heavy rains. As the Sahara dried up, many of these fishing, hunting and gathering folk migrated both north and south, changing their livelihood in the process. They adopted animal husbandry and brought under cultivation the indigenous millets and sorghums found in their environment. Nevertheless, the northerners and southerners did not entirely lose contact with each other. Those groups that had found a niche for agriculture in the oasis on the Sahara were linked both to the north and south by early Berber-Tuareg pastoralist who often traded (and fought) with the peoples whose lands they visited.

About 2,000 years ago the civilizations in the Western Sahel-Sudan region began to take shape. Pastoralists and oasis cultivators inhabited the most northerly region; pastoralists, agriculturalists and fishers occupied the middle Sudanese zone; and agriculturalists inhabited the southern region where because of the tsetse fly cattle had difficulty surviving. Biologically, these people ranged from Mediterranean-type Caucasoids in the north to Negroids in the south and genetically mixed populations in between. Their languages similarly reflect this range belonging both to the Afro-Asiatic group, which

includes Berber, Hausa, Ancient Egyptian, Arabic and Hebrew; and, to the Africa-wide group of Niger-Kordofanian languages. Socially, they were organized into extended family groups or lineage segments living either in small herding camps, dispersed agricultural homesteads or internally segmented compact villages in the process of becoming towns. Most of these populations were patrilineal with descent traced through the male line. The noted exceptions were the early Ghanaians and Malians, who traced descent through females. Marriage usually involved the gift of valuables or work from the family of the groom to that of the bride. Groups of youth organized into age-sets often went through the stages of life as a cohort, performing valuable tasks for their respective societies. Political leaders existed in almost all villages, and in time they would emerge as kings whose families formed nobilities, separate from commoners and from the serfs and slaves who had been captured in warfare. Belief in a Supreme God existed throughout the region, but in many societies the Earth was considered a deity and deceased ancestors were viewed as important intercessors between man and the supernatural. Charms, amulets and statuary were often viewed as repositories for supernatural agencies and cosmic power that protected men against each other or against the contingencies of earthly life.[3]

Whether as a result of internal dynamics or by stimulation from Egypt or the Mediterranean area, the kingdom of Ghana arose in the Sahel-Sudan region (in what is now Mauritania) about 300 A.D. Profiting from their location at the confluence of different ecological zones and trade routes, the early Ghanaians acted as a conduit for goods coming from the Mediterranean to the south and for tropical products and gold going north. The Ghanaians also afforded the exchange of ideas between Europe and Africa.

At the height of its power, ancient Ghana had all the trappings of the typical African kingdom. Kumbi was the royal capital where the king resided sur-

rounded by courtiers resplendent with gold jewelry and imported raiments. Here were griots who sang praises to the rulers, and officials who represented the provinces and districts of the kingdom. Here too, were priests and temples to the traditional gods and special wards that housed merchants and markets. In time Ghana became imperialistic like many successful kingdoms. It used its military might to conquer the salt-producing desert areas inhabited by trading and nomadic Berber-Tuareg groups. The Ghanaians also invaded and subjugated the Mande-speaking peoples of the primarily agricultural regions who had started to create kingdoms based on the Ghanaian model. Secure in their power, the Ghanaians welcomed traders from the north who, by the eighth century onward, began to proclaim that they had become Moslems, were following the teaching of Mohammed and wished to establish mosques in the ward inhabited by merchant populations.

Not many Ghanaians adopted Islam, but some of the subjects of Ghana did so. A group of Moslem teachers settled among the pastoralists and agriculturalists in the Senegal river basin, established a monastery and military camp (called a ribat) and began to diffuse their religion. By 1504, they had conquered and converted the Berber-Tuaregs, living in the Sanaja salt-producing region, and the people of the ribat (the al-murabitūn) went north to win Morocco and Spain. Abu Bakr led a group of Almoravids (Sanjadja Berbers whose Islamic empire embraced modern Morocco and parts of Algeria) south in 1062 and by 1076 they occupied Ghana's capital. Meanwhile, many Mande subjects of Ghana regained their independence and began to wax powerful. The SuSu people were strong enough to resist resubjugation by the Ghanaians who overthrew their Ammoravid overlords in 1087. In 1203 the SuSu conquered Ghana and scattered its people all over West Africa.

The victorious Mande peoples, led by Sundiata, established the Mali empire

about 1235, took over all the area formerly occupied by Ghana; and under the brilliant Mansa Musa expanded both westward to the Atlantic Ocean and eastward to Timbuktu (then a budding town) and to Gao (then the seat of the Songhay kingdom). As devout Moslems, the Mansas (kings) of Mali attempted to spread Islam all over the region. They were only partly successful because many Sudanese believed as fervently in their gods as did the Moslems in Allah.[4] The Sudanese saw the Moslem Malians not only a threat to their political independence but to their entire way of life. Such peoples as the Bozo fishermen of the Niger River, the Dogon of Bandiagara, the Bobo, Mossi and Lobi of the Volta area, and the Senufo populations of the Upper Ivory Coast believed that their deities and ancestors would forsake and destroy them if they were to adopt foreign religions.

The Dogon fled into the cliffs of Bandiagara and refused to accept Malian overlordship. The Mossi resisted Islam through force of arms. By the 14th century, the Mansas stopped attempting to impose Islam upon their tributaries for, as the historian Al-Omari reports, they feared that they "might lose the traditional allegiance of the pagan goldminers and farmers on whom the empire depended for its wealth."[5]

By the 15th century, Mali started to collapse. The western provinces in Senegal became independent, and the Wolof, Serer and Mende peoples created kingdoms in Senegal and the plateau area of Sierra Leone. The Tuaregs regained control of desert towns such as Walata. Mossi cavaliers from the south began to raid Timbuktu and other towns. Finally, the Songhay people of Gao, who had begun to dream of independence, arose, threw off the yoke of Mali in 1464 and, in turn, embarked on conquest.

Although they had been in contact with Moslem clerics and traders long before they were conquered by Moslem Malians, the Songhay never fully embraced Islam. Sonni Ali, the founder of their empire, worshipped the traditional gods

of his ancestors and expelled Moslem clerics and teachers from Timbuktu, Walata and Jenne. He saw no need for Islam as a unifying ideolgy as he established a commercial network based on Gao, Timbuktu and Jenne, built extensive canals and improved agriculture throughout his domain. Sonni Ali ruled by the power of his army, but it was out of the army that a brilliant soldier, Mohammed Toure, rose to usurp the power of Sonni Ali's heirs. In striking contrast to the Sonnis, Muhammed Toure (known as Askia the usurper) was a devout Moslem. He made the pilgrimage to Mecca (thereby gaining the title El Hadj), restored the power of the Moslem religious power destroyed by Ali, conquered parts of Hausaland, drove the Tuaregs back into the desert and launched jihads (holy wars) against the Mossi and other Sudanese peoples judged by him to be "infidels". Askia El Hadj Mohammed succeeded in extending Songhay power even further than that of Mali, but his very success led to serious discontent among his own subjects and conquered populations, and led to the envy of the Moroccans.

The Songhay empire began to crumble after Askia's sons proved weak rulers and the empire lost the gold trade to the Europeans on the West African coast. To make matters worse, the Moroccans, alarmed by the decrease of gold coming across the desert, invaded Songhay territory. In 1590-1591, they struck deep into the Sahel zone, conquered the Songhay and installed garrisons in Timbuktu. In the process they destroyed the last of the brilliant Sahelian-Sudanese empires. A historian lamented that "trade ceased to flow into Jenne, Timbuktu and Gao in the old way, and the trans-Saharan trade from the two last, which might have reached Morocco, began to decay. Worse than this, the structures and habits of orderly government, which had been increasingly spread over the whole western Sudan from Ghana, Mali and Gao in turn, and which were so essential for the production and passage of trade goods, both within the Sudan

itself and to feed the more westerly trans-Saharan trade, were now broken up."[6]

The western Sahel-Sudan region was never the same after the fall of Songhay. The Africans experienced "an age of troubles": Arabs drifted southward, conquering and Arabizing and Islamizing Sahelian populations; belligerent small states arose among the Mande-speaking populations; the Tuaregs periodically left their desert fastnesses to attack the towns of the Niger River; the Fulani herdsmen began traveling eastward, conquering small states or living in symbiotic relationships with agriculturalists; and the coastal region of Senegal, Upper Guinea, Sierra Leone and the Gambia, got locked into the Atlantic slave trade. First interested in "yellow" gold, which went into minting such coins as the English Guinea (from Jenne), the Europeans soon turned their attention to "black" gold for the mines and plantations of the New World. They kidnapped Africans when they could and bartered for them from African rulers when they had to. Periodically, local African leaders tried to reorganize the Sahel-Sudan zone. El Hadj Omar, using Islam as a military political weapon, attempted to weld all of West Africa into a viable state. He encountered French power and African resistance and failed. Almamy Samoray Touray of Upper Guinea attempted to build a state system primarily by military means, but he too encountered French power, fought against it, and was defeated and exiled by the more powerful Europeans. The Sahel-Sudanese zone became a part of the French empire at the turn of the century.[7]

INSTITUTIONAL SECTOR ANALYSIS

Introduction:

Because of this region's particular and rather complicated history, the analysis of the various societies by geographic zones is sociologically and culturally more relevant than by using any other criteria such as language or biological types. The various Saharan, Sahelian and Sudanese peoples in West and Central Africa have had to adapt to specific climatic and geographic conditions with the result that their socio-cultural systems have surprising similarities. Moreover, centuries of contact between them, the spread of Islam in these zones, and a common colonial heritage have resulted in patterns of interaction, cooperation and competition that are fairly widespread. The nomadic herders in the Sahara and Sahel and the peasant cultivators of the Sudan have always exchanged goods and services, and have needed each other despite differences in language and cultures and past history of conflict occasioned by slave raiding or imperial conquests.

The social institution of the various populations are described by the use of the historical present. The reason is that despite enormous changes brought about by European conquest and colonization, the traditional insitutions of these societies are still extant. This is especially true in the largely rural areas where European influence was weak and the institutions still fulfilled their traditional functions. It was also here that were found many constraints against drastic change. The effect of European colonization on these institutions will be discussed in another section of this report.

Sudanese Populations:

The social institutions of the primarily agricultural populations of the Sahara-Sudan regions of West Africa also reflect the long and complicated history of the area.[8] Those groups such as the Bella and Aser living in the oases on the Sahara may well represent the survivors of an earlier and widespread agricultural horizon which disappeared with the onset of the Arid period that still continues. Whether those agriculturalists who are now found mainly in the Sahel or Sudan area migrated there, or were there before that aridity set in is unknown. But they were some of the populations which were incorporated into the kingdoms and empires that appeared throughout the history of this region. This incorporation was possible because these agricultural peoples did produce enough of an economic surplus, which with the addition of trade and commerce, could support complex societies with noble families, commoners, serfs and slaves.

Most of the people of this region live in dispersed hamlets, compact and often palisaded villages, and in large towns.[9] For example, such Senegambians as the Serer live in extended-family compounds, each consisting of a cluster of huts, arranged usually in a circle and surrounded by a hedge, wall, or palisade. Wolof compounds adjoin each other forming compact villages. The Bambara, Soninke, Tukulor and other peoples belonging to the so-called Nuclear Mande group inhabit compact villages and towns, sometimes fortified by an encircling palisades. The Voltaic peoples such as the Mossi,[10] Samogho, located east of Mande live primarily in dispersed extended family homesteads, but the Dogon, Gurma and some Grunshi sub-groups have internally segmented compact villages. The prevailing residence pattern among the rural inhabitants of the Songhai, Hausa, Bornu, Bagirmi and Darfu areas is the compact village, but some Hausa and Bornu groups live in dispersed hamlets.

The larger towns in this area are divided into wards or quarters. The

towns of Djenne, Bamako, San, Mopti, Gao, Niamey and others are segmented into wards inhabited by local groups of kinsmen or by such stranger ethnic groups as the Diula and Hausa.

Whether inhabiting small dispersed neighborhoods, compact villages or large towns, most of the populations in the region live in extended family groupings. The extended family composed of the sons or grandsons of a common ancestor with their families, is normally the smallest unit of larger kinship groups known as lineages. The Wolof, Bambara, Mossi, Songhoi and most of the peoples in this region trace descent through males (patrilineages); but there are also matrilineal peoples such as the Fur in Chad. These lineages provide the basis for social organization in all of these societies, and are usually the institutions in which access to land, property, offices, titles and even the persons of their members are vested.

Where villages are small and inhabited by the members of one lineage or one of its segments, all of their land is held collectively by the village and administered by the village headman, usually a lineage elder. Extended family heads of the lineage are alloted plots in usufruct (or farm tenure) and they in turn allot land to the members of their families. In larger villages or areas with dense populations, lineages normally hold part of the land, and the heads of lineage segments allot land to members down to the extended family and its members. In a few state organized societies of this region, such as among the Tukulor, ruling families have expropriated land and have awarded it to their members. Rulers in similar societies also considered certain lands as restricted to their own relatives, or courtiers, and as public domain, but the rest of the land is controlled by lineage groups. Riverain societies such as the Bozo who are essentially fishermen, have the same attitude toward water as well as to land. Rights to both land and water are owned by Bozo community kin groups and ad-

ministered by their headmen.

The control of land by either patrilineages (or matrilineages), except where appropriated by rulers or noble families, means that for all practical purposes, people have only farm tenure in land; they do not own it. They and their descendants can use the land as long as it is fertile, and can reclaim it if they so desire after it recovers from fallow. If for any reasons the users of the land leave or die out, the land reverts to the corporate group-the lineage or the village. Since unused land is normally vested in headmen or village chiefs, they may allot it to other lineages or to newcomers if necessary. Unless the land is needed by lineage members, such newcomers are ordinarily not evicted from the land, and in time become so associated with the land that it becomes their patrimony. By the time this happens, the strangers have been absorbed by the lineage with no one remembering when and how they arrived.

Not only are lineages and their segments the basis for access to land and other property among the populations of this region, they are also the groups that ensure their survival, that is by the marriage of their members. Marriages among the populations in this region are usually arranged by lineage heads, especially the heads of extended families, through the medium of the brideprice, or bride service. The rationale for this institution differs from society to society. In general the bride payment serves to legitimate a marriage by transferring goods and services from the family of the groom to that of the bride. These goods or valuables may include money, jewelry, livestock, vegetable products, and various types of labor. They are provided by the extended families of the groom or in the case of labor by the age-mates of the groom, and are received by the extended family of the bride, and often the bride herself. So important is the bride price in legitimizing marriages, that without it, the children born of any union are deemed illegitimate. Some males whose father's

families did not completely pay the brideprice legitimize themselves by paying the price to their mother's family.

The responsibility of families to furnish the bride price or bride service for their members, ensure the dependence of young men on their elders. Since these elders control most of the resources of the extended family, including the labor and property of all of its members, and especially of the young men, unless the elders approve or give their consent young people cannot ordinarily get married. When this happens they could only do so if they are able to obtain help from their maternal kinsmen who are often ritually obliged to help them, or from district chiefs who provide them with wives in return for homage, fealty and tribute.

The corporate nature of the extended family and its parent, the lineage, is linked to two other institutions that are widespread in this region; the levirate and the sororate. Unless forbidden by Islam, men, especially young men, are permitted to marry the widows of their kinsmen or of their father (except of course their mother). Similarly, if a wife dies before she gives birth to a child for her husband's lineage, her relatives may send her sister (or any woman of her family) as a replacement. The object here is to ensure that the marriages arranged between families serve their function: to provide help and succor to husbands and wives; to link families together; and to provide children to continue the families and the lineages.

Except for populations influenced by Islams most marriages are exogamous, that is, contracted with people outside the village, and lineage. The Islamicized Diula favor marriage between the children of two brothers or what is usually called parallel cousin marriages. Some populations such as the Wolof, Bambara favor cross-cousin marriages, (that is, between the children of siblings of opposite sex) especially between a man and his mother's brother's daughter. Both

parallel and cross cousin marriages, when they occur, have as a consequence the retention of the marriage gifts and family wealth within a narrow circle of kinsmen, thereby enhancing the solidarity of these relatives. In contrast, marriages with distant and non-related persons, widens the distribution of goods and services, and provide the participating families with a wider network of in-laws.

Polygyny is the ideal if not the norm for the Wolof, Serer, Soninke, Bozo, Mossi, Songhoi and most of the populations in this region. The rationale given for polygyny is that the more wives men have the greater their chances for having children; the desire to have someone to provide uxorial (wifely) duties when wives with young babies return to their patrilineages or while lactating, practice sexual abstenance; and the often enormous help that women can provide in economic affairs whether as cultivators, artisans and traders. Some populations such as the Mossi permit sororal polygyny (the marriage of one man to two sisters) whereas others such as the Serer, Bozo and Songhoi prohibit it. In almost every case, however, the senior wife is in charge of her junior co-wives, and normally each wife has her own hut or apartment in the compound of her husband. The husbands are constrained to be impartial in dealing with their wives and to observe the rules whereby each wife in turn provides the necessary uxorial functions.

With few exceptions, the populations of this region such as the Kanembu, Songhay, Dogon, Nono, Diula, Mossi, Bozo are patrilocal (the new wife or wives go to live with her husband at his father's home). A few populations such as the Bijogo of Senegambia are matrilocal and among some Bobo groups, newly married couples live matrilocally and then patrilocally. Tendencies toward neolocality in which couples establish their own homes at marriage have been reported for both the Serer and the Wolof. But in general, married couples of this region tend to live with the husband's father's relatives.

The nature of married life varies in these diverse populations, but a number of institutional factors do influence the relations between husbands and wives. The clear-cut division of labor in all these societies marks off the economic and social activities of both men and women. The result is that they interact much more with persons of their own sex than with their spouses. Moreover, the influence of Islam and tendency for men who worship together to spend a great deal of leisure time together limits public social activities between spouses. The high incidence of patrilocality in this region also means that most married women are surrounded by the relatives of their husbands and must adapt to corporate kin groups of which they are not members. Their own patrilineages are supportive in the event of marital difficulties but often counsel patience rather than divorce. Men in this region sometimes take advantage of Islamic prescriptions for divorce, whereas normally wives cannot do so. Nevertheless, so important is having a wife that few men exercise this right and women often hesitate to leave households in which they are not well treated. Both men and women are constrained to maintain their marriages by a mutual involvement in the affairs of their families, and a commitment to having and rearing children.

Children are universally desired by the populations of this region. Almost everywhere barrenness is viewed with disfavor; barren women are divorced, abandoned or returned to their own families. Men suspected of incapacity to have children are pitied but have alternative mechanisms for becoming the pater, if not the genitor, of children. Barren, high-status women or successful market women can often obtain "wives" whose children become those of their husbands. In this way they can fulfill their obligations to these men.

Except for twins, which are feared in some societies and therefore suppressed, children are welcomed and every attempt made to maintain their health

and rear them to maturity. It is not unknown for parents to change their religions; leave their relatives; spend huge sums of money to seek help for sick children, or to prevent children from falling ill. Children are not only viewed as an indication of the strength and vitality of a family, but they are sources of links with other families, a source of help and succor in old age, and the means whereby men hope to achieve some sort of immortality in the face of death.

Child-rearing practices, including the lactation period sexual taboos of mothers, are designed to ensure the survival of infants.[11] Suckled on demand and seldom left alone while small, children grow to depend upon their relatives. As soon as they can walk, children are assigned to siblings who take care of them, and help socialize them as future members of their societies.

Just before puberty, the boys in most societies, from the Wolof Serer in Senegal to Kanembu in Chad, are circumcized. The analogous ritual for girls, clitoridectomy, is not widespread, but is found among the Dogon, Mossi, Bobo and other populations.

Age-sets or age-classes grouping boys and sometimes girls of approximately the same chronological ages are widespread in this region.[12] They are associated with the rituals of puberty and sometimes, the "bush" or Koranic schools in which the young people learn the history of their poeple, useful arts and crafts, the duties and responsibility of adulthood, and the religious beliefs of their societies.

Members of these age-sets often go through life together as cohorts aiding one another at crucial times in their life cycle. Among the Malinke, Bambara and many Voltaic populations, age-mates help each other perform the obligatory agricultural bride service, and cooperate in the agricultural activities of their respective families. They are sometimes the backbone of agricultural labor in

their societies. Age-sets of women, whether formally organized, or as informal auxiliaries of the men's, also provide help and succor to their members and families. They, too, often operate as communal labor groups for their own families, as well as for other families in their communities. Finally, age-sets are used as both formal and informal mechanisms for maintaining social order in many of these societies.

The more complex societies in this region are stratified with the descendants of conquerors or first occupants of the land being the dominant royal lineages, controlling administrative lineages, commoners, caste-like lineages (griots, smiths, leather-workers and the like), serf lineages, and slaves. The royals have superior access to the major resources of the societies such as goods, services and in the case of men, wives; and furnish rulers for the various provinces, districts and villages of their respective societies. Nevertheless, despite the ideology of the corporate nature of the royal group those lineages segments or families actually in power have superior rights to goods, services and power than those cadet or junior branches whose immediate ancestors were not rulers. Indeed, in time, the people of the cadet-branches become undistinguishable from the commoners and, like them, provide goods and services and personnel to their distant and more noble relatives.

The relations between the caste-like groups and the other social strata in the societies in this region are complex, because although they provide necessay services to their societies, they are maligned; judged dishonorable or are even held dangerous to all concerned. Thus the griot (bard) who keeps the genealogies of rulers, flatters nobility and the public by praise-singing, and sometimes act as public vituperator by criticizing wrongdoing, is judged a non-productive beggar, mistrusted if not scorned, is prohibited from marrying outside of his stratum, and is often not permitted burial in the earth.

Similarly, smiths are mistrusted because while they produce the tools by which people cultivate the soil and gain a livelihood, they also produce the weapons of war and thus cause death. Butchers must kill animals so that others might live, but are scorned because in the process they take life.

The position of the servile groups in these societies is complex and often ambiguous. Persons captured in warfare or sold by their captors, usually worked all their lives for noble families or wealthy commoners. Nevertheless, they were permitted to marry, and provide for their children who being born in slavery had a different status from their fathers or parents. Whether distinguished terminologically or not from "captives", the house-born dependents (who may be called serfs) were customarily not sold and in time began to merge with the other members of their communities as clients of their masters. As such they were free to engage in most of the activites of freemen and enjoyed the protection of their patrons whose interest they also protected. Thus when the French abolished slavery many captives returned home. The serfs often remained because they had become integrated into their communities and valued the patron-client relations they had with their former masters. Many of these people were proud of these relations and helped their masters when labor was required for such things as planting, thatching houses, and they continued to perform their traditional roles on ceremonial occasions.

There is a whole range of institutions to maintain order in the social lives of the people in this region. Regardless of the type of society, people sometimes resort to supernatural means to protect themselves against, or to punish their enemies. These mechanisms of social control are most often effective because people believe in them.

In the relatively small-scale and state-less societies, the heads of extended families maintain order among their relatives, and represent them in

councils of the heads of other extended families in the event of conflict. If these ad hoc councils cannot resolve the dispute, then there is often a recourse to armed might since there are few if any super-ordinate police powers in these highly egalitarian societies. Because of their proclivity to resort to force in the face of conflict such societies as the Lobi, Dagari and Bobo have been called "anarchic" meaning that they have no authority figures. The issue is not that they have no authority figure, but that they do not have the state, and therefore no officials who have arrogated to themselves the right to use force on behalf of the people. In fact, scattered throughout many state-less as well as state-organized societies are "earth priests", heads of lineages claiming a privileged religious status because of first occupancy of the area. People do indeed appeal to the "earth priests" for supernatural help in their agricultural rituals or during the period of conflict.. Nevertheless, these ritual figures lack the power to use physical force on behalf of the entire community of which they are a part.

Most of the societies in this region are organized into "segmentary states" or kingdoms. The rural dispersed hamlets or compact rural villages where most people spend their lives are aggregated into larger districts, provinces and kingdoms by a network or hierarchy of rulers, and administrators. The entire panoply of power and administration of the state is seen at the royal capitals often located in the larger towns. Here live the heads of hereditary and often endogamous noble families, classes of courtiers, war ministers, priests and sometimes Imams, administrators, tax collectors for the state, crown serfs and slaves, and various service classes of smiths, leatherworkers, and especially musicians, bards, and jesters. This pattern is frequently repeated on the subordinate provincial, district and village levels, but without the entire range of personnel and the pomp and ceremony.

Local government in such states is characterized by the rule of either an hereditary chief or one chosen by the inhabitants. He administers the collective property of the village and dispenses justice with the cooperation of a council of notables representing the important patrilineages in his village, or important noble families who may live there. Most issues involving persons outside the village, are sent up to the district chief for resolution.

It is really at the district level that most issues linking the local inhabitants with the state political hierarchy are resolved. Taxes from the periodic markets, traders and war booty used to be collected here for transmissal to the ruler; soldiers used to be recruited here and dispatched to the wars; and it is also here that all sorts of administrative decisions are transmitted to the local levels of the political system. In strongly organized states, such as Mossi and Gurma (or at certain periods in the history of the state, such as among the Bambara of Segu and Kaarta) district chiefs relate to provincial officials directly responsible to the king. These provincial rulers maintain courts comparable to those of the king, and aggregate the districts in the same manner as the district chiefs aggregate the villages. However, the provincial level was the more vulnerable to dynastic disputes and frequently disappeared after conquest, leaving the district chiefs directly responsible to the monarchs at the capitals.

Islam is the dominant universal religion in this region. Yet many of the populations here retain an allegiance to their ancestral religions. Later on both Catholicism and Protestantism made some inroads among the educated ranks. The Moslems are divided into two major brotherhoods (tariqas or "ways") the Qadiriya and the Tijaniya, and a number of minor ones such as the Hammalists, and Senegalese Muridiya. But except for small variations in reciting the litanies (dhikr) and matters of orthodoxy, there are no basic differences among these

tariqas.

All of the brotherhoods encourage their members to observe the five obligations of Islam: the profession of the faith ("There is no God but God, and Muhammad is his Prophet"); daily prayer; the fast during the month of Ramadan; the giving of alms; and the pilgrimage to Mecca. Not all of these requirements are easy to fill, but the most devout Moslems, especially leaders (muqaddam, imams, and marabouts) attempt to observe all these commandments, including the hadj. They seek to demonstrate that they possess baraka, defined as a supernatural gift of "blessing" or "mystical power".

West African Islam has been a conservative force, espousing the traditional values in many of these societies. Moslem leaders support the traditional position of women and that of the traditional leaders especially where the latter are Moslems. Using the Malikite tradition of the Shari'a or Koranic law, the Moslems in this zone have sought to square the canons of Islam with customary laws and values. This law, together with the study of the Koran, provide in the curriculum for koranic schools scattered throughout the region. These are presided over by learned men skilled in the dialectics of Islamic discourse, and custodians of much of the local traditions.

Christianity, a heritage of conquest in this area, has had more success among the lower orders than among the traditional elite. The missionaries converted many children conferred to them by the European administrators to be educated, thereby creating a class of Christianized and westernized people in most parts of the zone. The Catholic missionaries were more successful primarily because they were supported by the French, and being all male created a familial, if not paternalistic ambiance with their converts. In contrast, the Protestant missionaries, were opposed by the French, were nuclear family oriented, and not having the same relationship with their converts were less

successful. Moreover, in contrast to the Catholics, they tended to be less interested in modern education, and were more fundamentalist in their attitude toward many aspects of traditional African life such as circumcision, clitoridectomy, polygyny, and ancestor veneration. Scattered through the region are small groups of syncretistic churches which have attempted to blend Christianity with traditional religious beliefs.

The traditional gods in this region have been losing influence over the past eight centuries. First attacked by Islam (often by means of the jihad) the celestial High Gods have often only survived by fusing with Allah. The Earth Goddess, in contrast, has remained a central figure in many agricultural rites and has been supported by her representatives, the "earth priests". The belief that there are supernatural forces inhabiting the physical and human universes has led to syncretisms of beliefs in local tutelary deities with Islamic jinns. Bori spirits still possess people, especially women. Many Sudanese still believe in the efficacy of the ancestors in helping their descendants during periods of illness, misfortunes, and such major disasters as droughts and famine, and in many areas, ancient Moslem leaders have been fused with the ancestors as sources of veneration. Finally, the belief that human beings can harm each other through supernatural means is still widespread. Thus, traditional priests, and even Moslem clerics, are mobilized to prepare charms and incantations against the power of the perpetrators of evil.

The Sahelian and Saharan Populations

The contemporary social institutions of such Sahelian and Saharan peoples as the Fulani (Peuls), Maures (Moors), Arabs, Teda and Tuaregs represent the precipitate of a rather complex history of warriors and nomadic pastoralists adapting to a rather difficult environment.[14] Sahelian and Saharan pastoralism requires a high degree of social segmentation and a mobile community organization capable of permitting people to exploit available pasture lands, water resources and small oases. Traditionally, most of these populations have been migratory or have practiced transhumance, but a sizeable number of people have become sedentary. Most Tuaregs live in temporary camps composed of several tents of closely related males, but the nomadic Asben Tuaregs have four permanent villages and the Ihajenea Tuareg of Ghat live in an oasis town.[15] The agricultural Bella (Haratin), often found servile to the Tuareg live in moveable huts, or permanent huts or houses. The basis for community organization among the Maures is the "tent" (ahel) a part of the kabile or a group of tents inhabited by near relatives in migratory camps, or sedentary villages.

The Arab populations of the region are also migratory living in tents, but there are sedentary Arab villages in such a region as Regeibat and the rather large Arab (Chaamba) sedentary community at Metlili. The migratory Fulani live in dismountable huts rather than tents as they move between the Sudan during the dry season and the desert fringe during the rainy season.[16] However, over time, many Fulani groups have become sedentary or almost so. The Fulani of Masina live in semi-permanent or permanent villages together with their dependent populations such as the Remaibe. Those in the Liptako district inhabit large towns such as Dori with populations ranging between 1600 and 3500 inhabitants. Also present in the Sahara are the migratory Teda who occasionally live in the oases where they or their servile populations

known as Haratin, work their gardens.

Whether nomadic, semi-nomadic or sedentary, most Sahelian/Saharan communities are composed of extended families (with their component nuclear families) grouped in lineages; that is, large groups of persons who actually can trace their descent from a common ancestor, or into clans, composed of a number of lineages. Descent in most of these groups such as the Maures, Arabs and Fulani is patrilineal, that is, through the male line, but a few populations such as the northern Tuareg are matrilineal. However, even among these Tuareg, the influence of Islam is introducing the patrilineal principle.

The lineage and its component segments is often the institution par excellence through which people have access to land, property, both corporeal and incorporeal such as offices and titles. Thus in many ways the lineage can be viewed as a corporate group even though there is competition within the lineage, especially among its component segments or extended families. Ordinarily the heads of lineages are the ones charged with allotting the resources of the lineages to their component groups, or using the resources of the lineage to fulfill social and political obligations on behalf of their relatives.

The nature of the property often determine how and who allots it. Land and water, the two most important resources in this relatively dry area are the subject of different patterns of ownership. Thus although the Teda consider pasture land ownerless, each clan has areas which it customarily uses in mutual agreement with neighboring groups. Violations of these informal agreements can and do give rise to skirmishes, blood feuds, and, occasionally, pitched battles; the same is true of some water-holes and water courses for groups of Tuaregs, Maures and Fulani. Among the Liptako Fulani, pasture land is owned collectively by village groups, and may not be alienated by individuals. On the other hand, the agricultural land held by people of this group may be owned privately and may even be sold. Similarly, the trees and gardens owned by Tuareg, Ted and Chaamba (Arab) families in the oases and cared for by servile

populations may be alienated by them. Some noble families among the Tuaregs and Teda in this region have land which their vassals use, and for which they pay tribute. Again, some vassals have had their exclusive rights to land abrogated by the more powerful noble families.

Livestock, in contrast to land, pasture or water, is subject to more precise ownership by peoples in this area. Extended families are the ones who normally own livestock, and nuclear families are often the repository of ownership. These smaller units are the ones which must often make the decision about how to maximize their gains or to cut their losses in the face of new opportunities or grave disasters. Sometimes the availability of pasture and water affects the ability of lineage members to remain close to each other and herd their animals in common, and in cases of aridity the nomads scatter. Among the Maures, even the tent units of an extended family may be forced to take their animals and camp tens of miles apart much of the time. Then it must take every precaution to preserve its animals, the source of its livelihood.

Comfortable and well-to-do Maure families normally have twenty-five camels, fifteen sheep, and forty goats, but these could be easily decimated by disease, the lack of pasture and water or the attacks of raiders. To counter this, rich men "often lend animals to their poorer neighbors, sometimes for purely material convenience and sometimes as a form of charity, while owners of very large herds and flocks often lend parts of their holdings to less prosperous relatives and so disperse their property for a greater safety. A borrower enjoys free use of the animal that is loaned and of much of its products that are sold and must also pay some sort of depreciation fee if he is able".[17] Such loans bind poor men to richer men or to rich relatives, and afford rich men the opportunity to recover from disasters which occasionally wipe out parts of their herds. Nevertheless, such loans also lead to conflict especially on the death of partners whose heirs are not party to the agreement, or to disputes as to how much livestock was lost as a result of the raids by stronger Maure groups.

Marriage customs vary in this region, but in all cases, rights *in rem* and *in persona* are controlled by the lineages and these lineages or their segments play an important role in arranging marriages. The Arabs and the highly Islamized sedentary Fulani prefer parallel-cousin marriages, that is marriage with father's brother's daughter. This means that any bridewealth (usually cattle or other forms of property) is retained within the patrilineage composed of father's male relatives. Teda restrict marriage between any relatives nearer than cousins four degrees removed. The Fulani and the Tuareg prefer marriages between cross-cousins, that is, between the children of parental siblings of opposite sex. The Arabs, Teda and Fulani permit the levirate, that is marriage to a brother of a deceased husband. This means that the bridewealth and lineage rights over children remain with the deceased husband's lineage. In contrast, most of these populations prohibit the sororate, that is, the marriage of two sisters.

Most marriages in this region involve the transfer of wealth (either the brideprice or brideservice) from the family of the groom to the family of the bride.[18] Elders control most of the resources of their families, and consequently effectively control the ability of their young relatives to establish families. Normally, unless the elders of a family agree to furnish the brideprice, a young man cannot get married. Fulani fathers furnish substantial brideprices for the marriage of their sons. Although the Kunta Arabs have large brideprices, the wealth is usually provided by the man's father's elder or younger brother rather than by the father himself; only after a man has married does his father provide him with cattle to start a herd, a practice that emphasized the solidarity of the parental kinsman in family affairs.

Both the Tuareg and the Teda practice bride-service for the first year of marriage during which time the newly weds live with the bride's family and the groom provides labor for his in-laws. This practice is related to matrilineal

system of some Tuaregs where the children belong to the woman's lineage and not to that of the husband. If a matrilineal-Tuareg woman is widowed, her children are usually incorporated into her family's lineage rather than into the lineage of husbands as in patrilineal groups where the brideprice is normally the rule.

Until recently the young people in these societies could not get married unless they had parental approval. Because elders control all the wealth, a man's relatives must provide the bride price he could not personally accumulate in order to marry. Most families would not give a girl in marriage without the bride price since no man would be judged a worthy spouse if his relatives refused to give him the bride price. Periodically, couples would elope, but this was the exception rather than the rule. When, as sometimes happens, Teda families refuse to agree to a marriage by refusing a young man permission to do bride-service at their home, the young couple might elope to the man's home But if a pregnancy did not occur rapidly, these marriages dissolved and the women rejoined their families. Both the brideprice and the bride service are desired by most people in this region because exchanges of brides and wealth over generations serve to establish valuable reciprocal relations between kin groups.

Even though most of the peoples in this region value polygyny, most men are monogamous. Monogamy is almost universal among the matrilineal northern Tuareg because of custom, but is also common among both Islam and non-Islamic groups because most men cannot afford more than one wife. Polygyny is therefore only prevalent among the noble classes in most of these societies and among the elders who control their families' resources. Most young men are single and remain so until their relatives procure wives for them.

Attitudes toward divorce vary in this region. The divorce rate among the Fulani is rather high, but the Tuareg frown upon divorce. The Teda, too, dislike divorce because having no brideprice but bride-service, they have few means to recompense the husband whose wife leaves him.

Throughout the Sahel-Sahara region, residence is patrilocal meaning that wives go to live with their husbands among his kinsmen. Since the Teda and Tuareg practice bride-service for the first year of marriage, the newlyweds live with the bride's family. Significantly, Teda couples practice strict in-law avoidance in that the young people seldom address their parents-in-law directly but normally through another person. They thereby try to avoid the dangers that could especially beset a young man living in his wife's home. There is, however, some indication that many Saharan populations are driven by the exigencies of the nomadic life to be neo-local, that is, for couples to establish their own households or camps. Again, nomadism prevents strict adherence to a residence rule and facilitates the tendency of lineages or clans to attach themselves to stranger groups for protection. Neo-locality is fostered among the Kuntu where children are raised by their paternal uncles, it being considered shameful for a man to rear his own children. Likewise, married sons are encouraged to establish independent households.

Traditionally, the Sahelian-Saharan societies have been characterized by structural fluidity and often sharp social stratification. Among the Arabs, Maure, Teda and Tuaregs individuals and groups move up and down the social hierarchy as a result of population decline, loss of wealth or defeat in battle and must pay tribute to stronger individuals and groups. Thus until quite recently these societies were"a rather fluid and unstable constellation of satellite clans bound by politico-economic ties to a core whose elements were held together by ties of kinship, real or mythical as the case might be".[19]

On the other hand most of the societies of this region are highly stratified with hereditary classes and caste-like groups. Among the Tuaregs, apart from the religious marabouts there are the military noble Imochar, the pastoralist vassal Imrad, the serf-like agricultural Bella (Haratin), the domestic slave Iklan, and an outcaste group of artisans and entertainers known as the Inaden.

Similar groups exist among the Maures, Teda and Arab populations. In most cases class stratification is based on, or used to be based on military prowess, religious functions, the possession of livestock and the control of agricultural populations. People like the Teda of Tibuti used to derive most of their revenue from warfare, especially raiding the caravan traders. Tuareg augmented their pastoral economy by foreign trade, controlling the caravan trade and raiding for booty and slaves. Their vassal clans were used as military scouts, constituted an armed reserve force, and shouldered responsibility for the daily care and immediate protection of their master's herds. The Maures engaged in livestock raiding "so regularly and so often that it seems to have become an integral part of the normal pattern of relations between groups"[20].

People captured in warfare or controlled by force formed the basis for the servile groups found in the Sahel-Saharan region. For example, the Tuareg used to transform captive Teda, Fulani and other Tuaregs into slaves, and had patron-client like relations with many of the agricultural populations known as Bouzou, Bella, or Haratin. Captives lived in the houses or compounds of their masters and were made to herd their animals, act as watchmen or cultivate their gardens. Many Bella cultivated half their gardens for their lords. However, here too as in the Sudan, the relationship between the captors and their captives was transformed over time. Masters permitted their captives to live in their own homes and to have families, thereby transforming the relationship that was maintained over generations.

There were always mechanisms by which captives or domestics in this region could be manumitted or freed. Some captives were able to buy their freedom; others were liberated by their masters "for the love of God". When the latter happened, the captive was given a new name in a ceremony comparable to that for a new-born babe. But though free, many ex-slaves, like vassals, continued to bring yearly presents to their patrons, and the patrons continued to have the rights to hospitality from their clients. Thus, although a few captives

left their masters when the French legally abolished slavery in this area, many others remained as clients of their masters, cultivated fields for them in return for protection, and to have a relationship with important personages or families.

Government in most Sahelian-Saharan groups is conditioned by the wide distribution of local groups and their constant migration. Camps and small villages are controlled by headmen (elders of kin-groups) usually assisted by a council of men. Thus among the Maures the elders of the ahel and of the kabile resolve most of the problems that arise among their people. Teda headmen perform similar functions, but in addition, lead raiding parties and divide the spoils and act as spiritual leaders. Tuareg headmen are also responsible for grazing schedules and for sending out scouts to search for new pastures. Like all of the heretofore mentioned headmen, the Arab headman has little power except in local affairs. He is elected by and represents a council of married men and collects taxes or tribute from them for their overlords. Fulani headmanship is hereditary within particular lineages in specific local areas, but here too, leadership is consensual since most local groups take care of their own affairs until and unless they gather in larger numbers during the rainy seasons.

The local groups in most of these societies usually give allegiance to regional leaders whether known as sheiks, paramount chiefs or district chiefs. The chiefs among the Maures, usually members of the aristocratic military *or religious groups, preside* over councils composed of the committees from the smaller segments of Maure society. These chiefs are the ones who initiate new policies and direct their application even though the councils have a veto. The Tuareg paramount chief chosen from a family of hereditary nobility by clan or lineage headmen, has functions similar to those of the Maure chief, and like him, is paid tribute. The Teda paramount chief is selected in rotation from among the noble lineages of the society, but he has little authority and collects no taxes.

Where found, the hereditary ruler of Fulani states, such as in Macina and Liptako, receive tribute, and appoint district chiefs who levy taxes for him, provide soldiers, administer justice, and appoint or control heads of sedentary or semi-sedentary villages or migratory groups. Yet even in such fairly centralized societies the nature of Saharan society once led to a great deal of rivalry, blood feuds, and warfare over stolen livestock or other goods. The Maures, Arabs and Tuaregs used to engage in continual conflict with each other, and at times even the Liptako Fulani had to pay tribute to marauding Udalan Tuareg to avoid raids. The Fulani of Macina although better organized had to maintain a complex military organization both for offense and defense against other Fulani, Tuareg and Mossi from the Sudan zones.

Most Sahelian-Saharan peoples are nominally Moslem, but the level of devotion to Islam varies within and between the various populations. Throughout the region there are the so-called "clerical clans" known as swaya among the Maures and inislimen among the Tuaregs. These people are responsible for diffusing and maintaining Islam through two main tariquas or ways, the Quadiriya and the Tidjaniya. The Marabouts, or holy-men of these societies are the ones who lead the faithful through the devotional cycle of Islam. Except in oases or in large villages people such as the Fulani and Tuareg do not normally have mosques, but pray in areas marked out on the ground with stones. Like other Muslims in West Africa, the Sahelian-Saharans attempt to make the hadj and observe the other requirements of a religious life. They observe the rituals attending life and death. and send boys to koranic schools and even merdersas (modern Muslim schools) where these exist.

Despite the presence of Islam, however, a number of the traditional African religious beliefs still survive and are often found syncretized with Islam. Some Marabouts are regarded as magicians as well as holy men. It is reported that among the Maures "when a drought lasts so long that there is danger of

disaster, a Marabout is sometimes tied up hand and foot and beaten or left out in the sun until he promises to bring rain promptly or until rain comes. Sometimes the Marabout is stripped and beaten by moonlight..."[21] Marabouts also provide both sedentaries and nomads with charms and cures for man and beast alike. People believe in the efficacies of such charms or cures especially when faced with disasters.

Change and Impediments to Change

France was never able to introduce those fundamental changes in the Sahara-Sahel-Sudan societies that would have transformed the region and facilitate viable links between the people and the outside world. In fact, there is now widespread agreement that France's penetration of this area was marked by confusion and disorganization. While on the one hand, a number of statesmen such as Richelieu, Colbert, Napoleon III, Faidherbe and Jules Ferry wanted to colonize the area, and while merchant houses and missionary groups saw both material and spiritual riches there, many people in Metropolitan France always wished to be reassured that their leaders would make no major commitment there. The result was that French policy in this region was characterized by half hearted efforts, faulty planning, and uncoordinated development.[22]

After experimenting with military rule and local governments in its conquered territories, the French decided to create a West African Federation. Chad, which lies east of Niger was not incorporated into this body, but linked to an Equatorial African Federation. The Federal structure "was created to serve French interests and only indirectly those of the separate colonies;...the colonies were always regarded as the fundamental political units and...therefore the Federation was only a temporary structure".[23] Moreover, the Government General of the federation was not the product of creative and directed planning, but, rather, the product of a series of pragmatic and expedient policies having a variety of aims. Centralization was a response to the instability of the expansion process and a need to extend government authority, and the Governor-General, orginally an administrative coordinator, became the repository of the powers of the Republic.

From his capital at Dakar, the Governor-General administered the Federal budget, fed by indirect taxes and metropolitan credits, and had final word on

the budgets submitted by the Lieutenant-Governors of the various territories, who met each year in a Conseil du Gouvernement at Dakar. He promulgated metropolitan decrees, supervised important decisions at the territorial level, and controlled the movement of French civil servants throughout the Federation. Each Lieutenant-Governor, in turn, had under his direction a number of commandants de cercle, charged with the major administrative units of the colony which were divided into successively smaller subdivisions, cantons, and villages. A Secretary-General provided liaison with the various functional departments of the administration, and a Conseil d'Administration, consisting of the Governor, three officials, and three appointed 'notables', was consulted on budgetary matters.[24]

The operation of this structure was constrained by various political contingencies and by inadequacies in funding, personnel, transport, and communications. The major problem was that of finance. The Metropole provided little support since a law of 1900 required that each colony provide its budgetary needs through direct taxation. Indeed, Faidherbe's and French strategy, was "to dominate the country at as low a cost as possible and through commerce get the greatest advantages".[25] The result was that the colonies never had enough money, either for administration or for development. In 1910 the AOF had only one French administrator for every 5,547 square kilometers and 12,290 inhabitants, while in Upper Volta the ratio was one per 60,000 inhabitants.

The lack of administrators had two important implications. First, there was a substantial devolution of authority to all too few administrators who had responisbility for order and justice, taxation, census rolls, public works and so on. Secondly, there was the utilization of inexpensive local cadres both chiefs and technical subordinates. Thus the French, while advocating "direct-rule" had to practice a great deal of indirect-rule.[26] To mesh theory and practice

they favored smaller chiefdoms which would dovetail with the canton, and where the chief could execute, but not formulate, policy. In fact Governor-General Ponty's Circular of 1909 advocating direct contact of administrators with the population and a "politique de races", called for the recognition of local ethnic communities, and, where they had been conquered by other Africans, freeing them, and recognizing their traditional politics.

The problem with this formulation of administrative policy was that there was confusion about the new status of the local political authorities: Did they have power, or not? Moreover, this new policy disregarded many elements in the traditional political culture, and exposed the chiefs to the whims of local administrators. Chiefs who were allowed full discretion, and new power, inevitably committed what were considered 'abuses' and 'exactions', and were fined or dismissed accordingly. Even Governor-General Van Vollenhoven, who was supportive towards the chiefs, took care to underline the fact that "there are not two authorities in the cercle, the French authority and the native authority; there is only one! The commandant de cercle alone commands..."[27]

The responsibilities of the chiefs -- which covered the gamut of administrative tasks -- tended to far outweigh their prerogatives and resources. This was evident in the area of adjudication as well as that of policy. After an unsuccessful experimentation with the extension of French justice, the chiefs were made an integral part of the federal judicial system in 1903. In 1912, however, the judicial function of chiefs was restricted to conciliation, and the relative weight of French as opposed to customary law increased. The discretion of colonial officials was heightened by the system of administrative penalties called the indigenat, applicable to all non-citizens. Any administrator could summarily fine people up to 100 francs and jail them for 15 days for any of 26 infractions -- evasion of taxes, labor dues, or sanitary regulations, disrespect towards

authority and so on. Not even the chiefs were immune to such penalties. Rendered impotent by an administration too insolvent to finance the development of the area, the chiefs became the tools by which the administration sought to use local resources for development. The chiefs were forced to mobilize both people and resources to work on projects which were meaningless to them, and both they and their followers suffered in the process.

The restructuring of the political institutions of the Sahara-Sahel-Sudan zone to produce export crops has resulted in a number of continuing constraints on development including a distrust of political authority. The rural people had seen their traditional chiefs and nobility transformed either into willing tools of the administration, or into persons humbled by outsiders. Some populations had used "chefs de paille" in an attempt to protect their leaders from desacralization; others suffered the maladministration and extortions of "manufactured" foreign chiefs put over them by administrators practicing the old technique of divide and rule. Many peasants resented being forced to cultivate crops that they did not use or need, and which did not fit into their traditional agricultural cycle. They resisted paying taxes with European currency, a device which induced them to migrate for work, or enter a money economy by selling their subsistence and services. The result is that for many peasants, political leaders lost their legitimacy, if not their power and authority.

Advocates of change encounter subtle but often effective opposition from persons who have learned to distrust outsiders -- even fellow citizens of their own nation-state; for experience has shown that outsiders rarely bring gifts. Official public relations campaigns to induce people are often ineffective because most rural folk have been exposed to these campaigns during the pre - and post - independence period and did not benefit from the schemes offered. In almost every cercle or district headquarters there are the dismal remains of the technical paraphernalia of projects that did not work. The result is that

peasants wise in the ways of modern politics are now loathe to respond to innovations even when assured by local people of the possibility of success. The problem here is that despite their oppositions many rural people hesitate to speak out, thus suggesting by their silence that they have acquiesced. The denouement comes much latter when the innovation fails and frustrated officials are too embarrassed to admit that the peasants never really agreed to the projects in the first place.

The economic constraints on accepting innovation are often difficult to overcome because people who live very close to the subsistence level are reluctant to innovate since for them failure can spell disaster. As we have seen, the patterns of nomadism and agriculture presently practiced in the region are not pristine. They have evolved over time and today represent adaptations to the demands of a colonial system which insisted on the production of export commodities. In other words slow but steady changes have been taking place all the time. Thus despite the ideology of both the pastoralists and administrators, that herders prefer transhumance and a migratory life and despise agriculture, there has been a growing sedentarisation of pastoralists and their adoption of a mixed enonomy when conditions were suitable.

In Niger, Dupire found that the relative facility with which the Fulani passed from one type of pastoralism to the other, and became sedentary mixed cultivators was proof of their ability to adapt to changing conditions. She concluded that, "Nomadism is not a mystique for the Fulani, but a submission to the conditions in the physical milieu which, moreover does not blind him to the advantages of the sedentary life."[28] Tuaregs and Bella (Bouzou) also became sedentary when the circumstances permitted. They adapted mixed agriculture in which they used cattle to fertilize fields, and sent with young boys the herds into the bush during the planting season. They thus took advantage of the two

economic possibilites in their environment.

Dupire felt that the biggest problem in the region was the lack of water. She was convinced that the creation of wells "would resolve this painful dilemma for the sedentaries as well as for the pastoralists".[29] What must be understood is that the Fulani, Tuaregs and other Sahelian pastoralist populations have a fairly good idea of how many animals would support their families under ordinary conditions, and that they try to maintain this number even in the face of administrative pressure. Often their behavior appears bizarre to foreigners , even to other Africans, since they do not sell their cattle at the most propitious time to gain the maximum profit. But there are environmental, cultural, as well as moral reasons for this type of behavior. The possession of cattle does give the herder "social prestige which he can acquire in no other way and gives him psychic satisfactions in comparison to which the enjoyment of foreign goods or luxury articles remains qualitatively negligible".[30] Then there are such practical considerations as the fear that the money obtained by selling their stock might be stolen or lost, not to mention the temptation to spend it for trivial purposes. Thus the resistance to sell his cattle for money "is in very many cases the reflection of a wise prudence, at least so long as he does not feel that his own security and that of his cattle, in an ungrateful region, have not been brought to a new economic equilibrium."[31]

The problem for the herder and innovators alike is that their ideologies, beliefs or their values often lag behind the technical changes that have taken place. They often take emergent patterns for granted without even recognizing that there has been a change in the pastoral way of life.[32] The task for the innovator is to study the evolving patterns, and try to harness them rather than assume a static situation, and one that must be changed regardless of circumstances. The pastoralists are willing to change, and they are anxious to in-

crease their revenue, but it must be realized that people do not change for change's sake. If new economic activities are designed to produce material benefits, these benefits will be sought only if they contribute toward the satisfaction of the social needs of the people themselves; for people do not willingly change their economic behavior unless they are convinced that they would benefit. Force has been used in the past to compel the pastoralists to contribute to the "public good" but they have always reacted by escaping these constraints as quickly as they could do so. They flee from constraints even though their own behavior is changing in the direction sought by the planners.

The relations between the nomads and the settled agriculturalists have not been static, but have been evolving over the years. The nomads exploit lands too marginal for the agriculturalists and move into the agricultural areas during those periods when their normal habitats are too desolate to maintain their flocks. Under ordinary conditions the agriculturalists welcomed the presence of the herders. Stenning describes an extensive symbiosis between pastoral Fulani and neighboring agriculturalists: "Except perhaps in the Sahel, the pastoral life is pursued not in isolation, but in some degree of symbiosis with sedentary agricultural communities. Alongside the continuous exchange of dairy products for grain and other goods, there have existed, possibly for many centuries, arrangements for pasturing cattle on land returning to fallow, and for guaranteeing cattle tracks and the use of water supplies. Pastoral Fulani did not, and do not, merely graze at will, but obtained rights to the facilities they required from the acknowledged owners of the land. The payments in kind made for obtaining the rights were not merely economic transactions but involved the Pastoral Fulani in the local ritual observances relating to land."[33]

However, sometimes transhumance led to conflict when both herders and pastoralists competed for the same areas. When and where the pastoralists were

victorious, they not only took over the lands of the agricultural populations, but often established a kind of patron-client hegemony over certain groups of agriculturalists (Bella or Bouzou). If the pastoralists were bested they moved off with their herds seeking better arrangements with other agricultural populations. Sometimes as a result of periodic droughts and epidemic diseases, some pastoralists lost their herds, and temporarily adopted agriculture. However, as soon as their herds recovered they resumed their nomadic existence, even though they retained viable relations with the agriculturalists.

The conquest of the western Sahel and the incorporation of this region into the French colonial empire affected the relations between the nomads and the sedentaries. The abolition of slavery freed the agricultural captives of the pastoralists even when it did not end the patron-client relationship between them. The French also attempted to sedentarize the pastoralists in an effort to curb their mobility and to incorporate them into the colonial structures that were being implanted. The pastoralist often escaped by crossing territorial borders, and were able to resist sedentarization and avoid involvement in the many schemes that attempted to develop the region. The irony here was that once many agriculturalist schemes were launched, the pastoralists were unable to move their flocks into areas as in the past. Moreover, they gained the reputation of resisting all change and were viewed with disfavor by both the agriculturalists and the administration.

Despite their mobility, the pastoralists were unable to withstand the attempt of the colonial regime to intrude into their affairs. Gradually the district commanders persuaded their rulers to settle down, so that they could serve as links with the nomadic populations. The result was the growth of status differentiation within formerly fairly egalitarian populations. Gradually, also, the influence of the colonial regime's activities led to an increase of population

among both the human and animal populations of the nomads and of the agriculturalists. The difference now was that the nomads, being more marginal to the colonial structure, were at a disadvantage in this competition. Lack of education, and lack of knowledge of the colonial institutions reversed the status relations that formerly existed between many pastoralists and agriculturalists. It was only in the areas truly marginal to the administrative centers that the traditional patron-client relations between the nomads and the agriculturalists persisted. But as more people from the agricultural societies joined the subaltern cadres of the colonial regimes, they moved to end what they considered to be feudal-like relations between the nomads and their vassals.[35]

Every extension of the central regime into the traditional economic and social relations of the nomads and the sedentaries, whether it was the colonial regime, or the African nation-states, has eroded nomad dominance or privilege. The exception has been Mauretania where the demographic superiority of the nomadic people linked to Islam and Arabism, has resulted in loss or the colonial-derived high status of many sedentaries. However, even here the nomads may be at a disadvantage since they may be victims of an alliance between the sedenterized nomadic peoples and the agriculturalists against those who remain truly nomadic. The split between the Town Fulani (Gidda) and the "Bush" Fulani (Boroje) that occurred in Nigeria may well be replicated in the western Sahel. There, the ethnic factor which linked the two Fulani communities, became less important than those factors that linked the Town-dwelling Fulani and the Town-dwelling Hausa. It is possible that the nomad may not be able to continue his way of life and may be forced to become either wholly or semi-sedentary. It is doubtful that if the agricultural populations improve their techniques they could permit pastoralists to use their lands.

One of the major issues facing economic planners in the field of agriculture

is whether cultivators would agree to adopt individual tenure. Indeed, many agronomists argue that African agriculture would never become efficient unless the peasants shifted from "farm tenure" or "usufruct" to individual holdings. Pelissier who studied agriculture among the Serer of Senegal believes that unless they institutionalize individual tenure and with that the possibilities of mixed farming, the multiple pressure of demographic increase, Islam, the exigencies of a commercial economy and the spread of urbanization could have grave implications for their society. He concluded that "the issue is less in discovering technical solutions than in substituting in one way or another the concept of 'geographic patriotism' for the present 'biological patriotism' which among the Serer would facilitate the introduction of a genuine land tenure system."[36]

The issue here may not be individuation of land tenure per se, but what this change might mean to the relationship among people in the lineage -- the institution in which land and other goods and services are vested. Individuation in land does imply individuation in family or lineage relationships. But if lineage membership means anything, it means the mutual cooperation of its members against the exigencies of life, especially the economic ones. A man therefore unconsciously resists detaching himself from his lineage in order to cultivate his own plots, unless he is assured that he would receive a just return for the fruits of his labor. The problem in the past is that there was no such grarantee. But unless people can be ensured that they have the ability to survive the isolation of their lineage through the individuation of land, they will remain linked to the lineage and through it to the traditional farm tenure system.[37]

The spectacular growth of vegetable gardening (jardins maraîchers) in and around the towns and larger villages in the Sahel zone, suggests that cultivators

willingly adopt modern forms of agriculture, and that the issue of individuation in land may not prove insoluable once the benefits are clear. Near every dam, waterhole, or stream in the vicinity of these agglomerations can be seen peasants cultivating garden vegetables to supply the urbanizing populations which have or are acquiring new dietary habits. In many cases these plots were acquired by the peasants using traditional land tenure practices. The potential user sought permission to use the land in return for goods and services. If the land was unused the owner or custodian permitted the applicant to use it, under an assured tenancy unless the owner later wished to use it, or give it to members of his own family or lineage. In any case the question of tenure was muted since the crops cultivated were annuals, that is, they were sown, cultivated, and reaped during the course of a single year. Thus if the proprietor wished to regain his plots, he simply gave the occupant one year's notice to vacate. And since the occupant had not tied up too much labor and capital into the land he saw little difficulty in surrendering the plot. Of course, the situation would have been different if the occupant had planted perennials and had invested a great deal of capital in the plots. The significant fact is that the issue of individualism in land seldom arises unless the proprietors try to retake the plots to give to persons who would give the owners more money or gifts.

So important is the income form the vegetable gardens that this type of cultivation is diffusing from around the large urban centers to the country districts. One district commandant in Upper Volta told the writer that the future of agriculture in his area lay not in traditional agriculture, that is, cultivating the cereals or cotton, but in the jardins maraîchers. He reported that it was not uncommon for some young people to make as much as 100,000 CFA ($400.00) per year by working plots along the dams whereas the ordinary cereal cultivator made no more than 15,000 CFA ($60.00). The problem for this official was how to get

the necessary water supply for these types of projects. He felt that by doing so he could retain the young people in the rural areas where they could produce enough food for themselves, and for export to larger towns.

The difficulty for the economic planner is how to expand these small-scale holdings into large-scale agro-business complexes. The latter have never succeeded in the Upper Volta and in most of the states in this area. The Voltaics suggest that their main need is for water, but the experience at the Office du Niger sugggests that water is not the only problem. The problems posed by expansion in scale of the projects might well be the major ones. When large-scale projects are developed, the major decisions are taken out of the hands of local peasants. Agronomists who are often not familiar with the historical vagaries of the area are placed in charge, and even when they are sympathetic to folk wisdom are not able to ask the relevant questions. The state often introduces cooperatives, but these cooperatives, linked as they are to larger systems are often incapable of responding to local concerns. Or, the cooperatives in order to maximize their efforts might make greater demands on the local systems than can be met. The result is often conflict: missed schedules in production; misunderstanding of price accords; charges of mismanagement, corruption and studpidity; and either the peasants or the state break the agreement. The perennial problem is: how does one move from efficient small-scale production to large-scale production without chaos? Is it possible to make long range plans for incorporating the emergent small-scale changes into a larger system of change, rather than seek to impose drastic change on a local system that has no way of accommodating it?

Attempts to improve agriculture and livestock production in this region through large-scale projects, large-scale ranching schemes, small-scale mixed farming or the development of jardins maraîchershave all ignored the role of women

both in agriculture and in herding. Traditionally women have always participated in the herding and agricultural work in the societies on this region. Fulani women have always milked the cattle and young girls worked with boys as herders. Except for the more strenuous work of clearing new fields, women among the Wolof, Bozo, Serer, Mossi and Songhoi have participated equally with men in sowing crops, cultivating them, and harvesting them. Working equally hard as the men in the cooperative fields of their extended families, women also had small individual plots where they cultivated those vegetables, condiments for sauces, or tobacco for sale in markets.

The Europeans always hesitated to use African women in those agricultural schemes that they introduced. Most of the administrators had come from the urban centers of France, and had the impression that only men were suitable for agricultural work. Moreover, they were unwilling to subject women with babies on their backs to the rigors of the champs du commandements. In this, they were guided by their own biases as well as by the traditional African norms which generally excluded women from actively participating in those inter-familial agricultural work sessions designed to perform laborious but intermittent tasks. (The women were present at these "bees" but mainly to give food and drink to the men.) The result was that those administrators who used women to transport cotton to the large collection centers or to level roads with iron rollers were criticized by the Africans who resented their female relative being subjected to European control, and by the missionaries and travellers who viewed such female labor with horror.[38]

What largely went unnoticed by most foreigners in the western Sahel was the increased participation of women in the traditional agricultural sector as a result of the withdrawal of men from this work to serve either as forced laborers, forced cultivators, soldiers, or who worked as seasonal migrant labor outside

their societies. True, the women seldom cleared new fields, but they intensified their activities in other aspects of agricultural work, and reduced the amount of time they spent on their individual fields. Then as the fertility of the too-often used fields declined the attempt of women to increase food production, also failed. Thus the women, though unseen, were victims of the growing economic problems in the Sudan-Sahel zone.

Post World War II attempts at introducing voluntary changes in agriculture in this region have usually not involved women. Now, too, the reasons are largely cultural. Westerners, and indeed, educated Africans are loathe to place African women behind the animal-drawn plough, the most widespread type of agricultural innovation. Again, most officials would not consider sending the few educated African women to foreign schools or to any school in order to learn improved agricultural techniques. They felt that such women were desperately needed in the other crucial areas of development, especially in those agencies devoted to social change. The result is that women were left out of schemes to improve an important economic activity in which so many of them are still functioning-but in the traditional way.

Attempts to introduce improved agricultural techniques to African women will not be easy, especially because of the social and cultural factors mentioned above. In the first place, it may be more difficult to get trained women to go into this field than it is to get men to do so. Many African countries have been plagued with the problem of keeping men trained as agricultural monitors in the field. The tendency is for them to move quickly up the professional ladder and into the ministries. The result is that many farmers know more about their problems than do the highly mobile monitors. Given the other functions and/possibilities for trained women, the tasks of keeping them employment in the rural areas would be more difficult. Secondly, rural African families may not willingly permit their female members to be trained in agriculture under the supervision of male outsiders. (Black extension agents in the

American South have reported that while white male farmers willingly accepted their advice and often invited them home for lunch, they did not permit the women in their families to associate with the agents either in the field or at the table even when the women prepared and served the lunch). Thirdly, male extension agents may not willingly work with women since to do so may raise too many problems of conflicting statuses and roles.

Interestingly enough, male African farmers seem to have less inhibitions imparting new skills to their female relatives than foreign male extension agents may have. I have witnessed farmers teaching their daughters to "plant in line" with animal-drawn ploughs. Neither these men nor women appeared to have had any inhibitions about their task, and they did not appear to view their activities as belonging to another universe-the universe of cash production. Whether it would be possible to use women as farmers in large-scale agricultural activities is still problematical. Data from the Office du Niger might provide the necessary clues and guidelines for such a venture. Whether these data are available or not, some effort should be made to harness and improve the agricultural work of women. The Human Resources Development Division of the Women's Programme Unit of the ECA argued in February, 1973 that: "If all of the persons who are involved in the human tasks of survival and creation of a better life are allowed to share the opportunities available to apply scientific knowledge and technological advances, development will be achieved at the most rapid rate possible. Conversely, if some persons are left outside the stream of this knowledge, the pace of development will be slowed down for the whole society." The task will be to devise the mechanism by which the skill of women both in agriculture and pastoralism could be improved even though the difficulties would be greater with the highly mobile herding populations.

The social constraints to development are often more difficult to deal with than the economic ones, since they often exist within the domestic group—

a sphere of social action which few state systems have been able to influence. As reported above, the extended family and the segments of lineages were and still are the social fields of greatest importance to the people in the Sudan-Sahel-Saharan region. These institutions controlled the basic resources of their members, and regulated the way in which they dealt with the outside world, economically, politically, socially and ideologically. The colonial regime had the power to change many of the economic and political structures of the societies in this region, but it did not have either the power of legitimacy to effectively change the social and religious institutions of the people they conquered. Colony policy, however, inadvertently produced changes in social and religious institutions.

There is little indication that the colonial regime viewed the traditional African social systems (outside that of domestic slavery) as impediments to economic development and therefore the objects of attempted change. Administrators did have the normal negative reactions of all people toward the institutions of others-- especially those they had conquered and now ruled. Yet, they were so short-handed that they feared to interfere in the domestic affairs of their charges and risk stirring up rebellion. Moreover, those men who subscribed to the philosophical views of Montesquieu and Gustave Le Bon considered the institutions of Africans as adapted to their milieu.[39]

Not the administrators, but the missionaries were the ones who insisted that the African social institutions be changed.[40] They saw these institutions not only as impediments to the spread of their gospel, but also to the introduction of "western civilization" as well. The missionaries attacked these institutions whenever they could, but it was the actions of the colonial regimes in the economic and political spheres that provided the greatest impetus for the Africans to change their institutions. For example, it was taxation, forced labor, and

forced cultivation, that eroded the corporate nature of the lineage.. Even when because of intense resistance, the administration backed away from individual taxes or taxes on women and children, the need of African families to enter the money economy in order to get money to pay taxes affected family and lineage cohesion. This occurred because the heads of families lost absolute control of the goods and services of their charges and thus the ability to control their lives. For example, as the livestock and labor traditionally used as bridewealth by many of these populations entered a universal market economy, young men were able to arrange marriages without the help of their relatives. Once this happened, preferential marriage rules started to change, and so did locality rules.

The institution of forced labor which took young men away from their villages not only weakened family ties, but expanded the social horizons of young people.[41] For the first time, the youth were able to compare their own institutions with those of foreign peoples, and when they found these institutions more satisfactory they were more prone to criticize their traditional institutions. They were also now free to leave their communities if they resented the authority of their elders, neighbors or chiefs. For example, those men who no longer viewed agriculture only as a means of subsistence but wanted cash from it, often resented their inability to sell part of the crop collectively produced and left home.[42] Again, young men anxious to marry and having the ability to earn money for the bride wealth no longer willing waited for the permission of their elders to wed, often arranged their own marriages, or left home.

But perhaps the greatest impetus for social change in this area was the development of new cities by the colonial regime, or the transformation of indigenous towns into administrative centers or commercial entrepôts. The development of Saint Louis, to serve the needs of Mauretania and Senegal and the establishment of Dakar to serve the whole federation; the transformation

of Bamako and Ouagadougou into modern capitals; and the creation of Niamey and N'Djamena in Niger and Chad respectively provided a magnet for the ex-soldiers who could no longer tolerate the traditional institutions of the rural areas; and a haven for persons escaping social, economic and political problems in their home villages.

Once in the cities or in the large towns, the migrants were caught up in a different social ambiance. Some tried to recreate their traditional institutions and to establish ethnic wards in the towns, but even so, the total environment of the towns tended to modify these institutions. Moreover, town life did not encourage the persistance of lineage ties, plural marriages, and the traditional division of labor between men and women. New needs arose, and people were constrained to meet these needs by increasing their articulation with the economies of towns which were themselves linked to the economies of the Metropoles. Many of these urban populations are ready to adopt new lifestyles; the problem is that their countries are still too poor to make this way of life possible.[43]

The rapid growth of towns in the Sudan region has had an effect on the rural communities. Not only have families whose men are absent been constrained to change their economic activities, but the reduction of resources has substantially reduced the power of family and lineage heads. They can no longer act for and make alliances in the name of their dependents. Nor can they control the behavior, lives and destinies of young people anxious to move to the cities--the centers of modern life. Parents witnessing the continuing exodus of their children become more anxious to have more children so that some of them remain to provide insurance for their old age, and for the continuity of families, whose members are scattered far and wide.

Not only are the bonds between families loosened by the rural exodus and the growing nucleation of urban households, but different life experiences and incomes have started to produce status differentiation among relatives. This is occurring despite the persistence of the ideology of familialism or traditionalism. The cleavages among kinsmen produced by educational differences, economic differences, religious differences and residential differences increase despite attempts to control differences by family gatherings, mutual aid to poorer relatives or ritual visits to home communities. Even the cohabitation of family members belonging to different strata does not help diminish social distance because these relatives participate in different social, economic and political networks. It is still too soon to determine what kind of social stratification will develop this area. Nor, given the ideology of African socialism or communalism how the emerging status will handle the problems of economic development.

The educational experience of the people in this area has influenced how they have reacted to attempts at economic change. Indeed, many development plans produced for this region have failed because the planners did not take into consideration the educational profile of the countries concerned. Western education was introduced to Senegal before 1854 but in Chad at the other end of this zone western educational forms had not been introduced until after World War II.[44] Before the arrival of the Europeans, Koranic schools throughout the region had provided a classical Muslim education for their pupils, but it was only when the missionary and government schools were introduced that the students were given the basis for dealing with the dominant western institutions. Even so, the nomadic way of life prevalent in the northern areas restricted the development of schools and the introduction of modern education.

Once schools were developed in this region, the issue of the nature of education was joined. Except for the Koranic schools, all the schools in this

region had to provide education in French. Moreover, the school administration and its curriculum were modelled as closely on those of France as local conditions would permit. Occasionally, the Federation's government or local authorities would develop programs in technical matters or agricultural skills, but these were meaningless for children who by their attendance at school were held destined for the administration. Moreover, the distortion of agricultural programs in the schools into a form of childhood forced labor by teachers who sold the products of school gardens made the brighter students hate any form of cultivation. The existing schools were handicapped by many things: the shortage of teachers; the intermittent attendance of students; the lack of suitable teaching equipment and of a clear relationship to the realities of the societies they were to serve. The Muslim community especially resented the lack of higher education in Koranic. Those communities in the Soudan and Chad, among other countries, created their own institutions of higher education modeled on Egyptian Islamic institutions.

The early attempts to educate women ran into severed social and cultural difficulties. The Muslims in this zone, especially the Maures, refused to place their daughters under the tutelage of Christians for fear that they would desert Islam or be induced to leave their families. The non-Muslims in the area had some of the same fears but in addition were faced with the issue of infant betrothal and child brides. Since many of the girls were either promised to husbands while still small, or were married while still quite young, parents had to take into consideration the views of their sons-in-law before they could send their daughters to school. And since many of these actual or potential husbands were seeking wives and not school girls, they were hostile to the education of women. Another problem was that the parents and the husbands of girls placed too much value on these girls' work, both in the homes and in the fields to permit them to go to school. As far as many parents were concerned, the recruitment of male children for schools was a form of childhood forced labor

and they sought to exempt their daughters from this. The result was that by 1935 there were only 2,060 girls in the village schools or among the 15 or so women in the nursing and midwifery section of the Dakar Medical School.

Postwar educational programs in this zone are still beset with problems. The notions current in the region during the decolonization period, that the Africans should find a more authentic model for educating their children, failed to win widespread support. It was one thing for the ideologues of the Société Africain de Culture to say that Einstein's Theory of Relativity could be translated into Wolof; it was quite another proposition to seek to educate children in this language. Most officials and parents view a metropolitan-type education as a passport to civil servant professions and thus elite status. They feared that any attempt to Africanize education would result in a fall in standards or "enseignement au rabais." The result was that countries such as Upper Volta spent some 23% of its budget in 1960 to give only 8% of its schoolchildren the kind of education that may not be in the best interest of the country. Moreover, most of the children in these countries who received education lived in urban areas. For example, while 75% of the children in Bamako went to school only 3% of the rural children in Mali received the opportunity.

Education in the Sudan-Sahel-Sahara area is still geared to producing a bureaucratic elite for the cities. Rural parents continue to hope that their children could get an education in an urban center and thereby escape the peasantry. This sentiment is understandable given the vast difference in life chances between the functionary and the peasant. Even when attempts are made to educate students in the rural areas for agricultural development, the successful ones become bureaucrats in the field of agriculture.

Technical education in this area is still subject to a number of important restraints. The infusion of western values has not been strong enough to

eliminate many Saharan-Sahelian-Sudanese populations' traditional attitudes towards the manual crafts. In many of the hierarchically-organized complex societies, the nobility was strongly prejudiced against all crafts, and left them to be performed by the lower classes or ranks. Smiths, shoemakers, weavers, jewellers all belonged to caste-like groups and, although functionally necessary to the societies, remained marginal to them. Second, during the colonial period the Europeans who were the rulers did not engage in manual work, and subscribed to the idea that manual work was degrading even though necessary for modern societies. Third, the colonial situation was not one in which industries developed; therefore, the few technical schools that existed trained people to repair small machines rather than to participate in important industrial complexes. The result was that even today the Lycée Techniques are viewed as places to which the less qualified persons are sent. The abler students prefer to be generalized functionaries than qualified technicians and specialists.

Any attempts by planners to overcome the resistance toward specialization must take into consideration the relationship of this trait to bureaucratic organizations. Students feel that they must be prepared to fit into any position where there is an opening provided they can pass a general examination for it. The object of many functionaries, then, is to see which jobs pay more and take the exams for it. The result is that people who learn jobs well leave them for positions requiring new skills providing that they pay more. This makes a lot of sense in terms of individual mobility, but it acts as a constraint on development. Young people do not acquire the skills that are necessary in any technical area. So strong is the bureaucratic tendencies among young people that even when trained as doctors or engineers, they abandon their métier to work as functionaries.

Directly linked to the penchant for bureaucratic jobs is the hesitation to study outside metropolitan areas. It comes as a surprise to the observer to be informed by many young people that they would not consider studying anywhere but in France. This seems all the more tragic when it is realized that some of the children of metropolitan Frenchmen serving in African countries study business and engineering in such countries as the U.S.A. It is not simply that the disciples are more orthodox than the masters, but that many ministries and businesses would not honor foreign degrees and diplomas even though their metropolitan counterparts now do so. Because of such cases of "cultural lag", adventurous graduates of foreign schools are not permitted to demonstrate their skills.

The current drive to educate women to help in the development process still encounters a multitude of problems. People no longer say that: "If your sister goes to school, your next meal will be your fountain pen".[45] Nevertheless, there is still the feeling among many government officials that the money spent to educate women is wasted since they do not make too much of a contribution to the economy. Functionaries point to the metropolitan-derived fourteen weeks maternity leave for women civil servants, and the time off given for lactation purposes, as a drain on the economy. Gradually, however, women have started to play roles that were previously closed to them. A few of these states have had women cabinet ministers, parachute jumpers and so on. The task is for the mass of women to consider these tasks within their province and not only the tasks of women who have joined the ranks of "les Europeens."

While religion, dealing as it does with eternal verities, tends to be a conservative force in most societies it cannot be said that it has universally acted as a constraint to development in the Sudan-Sahel-Sahara region. True, the Muslims were in the forefront of opposition to French penetration and to Christianity, and have resisted westernization and the education of women. Yet, at the beginning of this century, many French administrators saw the universalistic

tendencies in Islam as providing the homogenizing force which would eliminate ethnic and religious heterogencity, thus providing the entree for a later diffusion of Western civilization and Christianity in the region.[46] The early attempt of the French to use Islam in this way failed, but the Africans themselves saw the efficacy of the universalism in Islam and many converted to that religion. Young people who had left their homes for the first time as forced laborers or voluntary labor migrants recognized in Islam a pan-African brotherhood that permitted different peoples to interact with one another. And while many migrants did not adopt Islam when away from home, they readily did so when they returned home to find Islam spreading in their communities.

The Muslims have been in the forefront of some of the most important economic activities in this area. The Dioula traders taking advantage of the end of the "time of troubles" (from the fall of Songhoi until French conquest) traded both traditional and newer goods throughout the region thus stimulating the growth of the money economy. Later on , when the opening of roads made motor transport possible, Muslim truck drivers transported both goods and men from one region to another, stimulating trade and commerce in the process. But perhaps the most important group of Muslims to take part in the economic activities of the region were the Mourides[47] of Senegal. Adhering to an ideology of hard labor, the members of this sect were largely responsible for extending peanut production into eastern Senegal. They pioneered mechanical cultivation of this crop in collaboration with French commercial organizations, and became the wealthiest community in all of French West Africa. Their central mosque at Touba became the local mecca for thousands of pilgrims, and a point for the diffusion of new religious and economic ideas.

Despite their economic activities, the Mourides[48] have not been viewed by many younger Muslims as a progressive social force. The young people resent the persistent dominance of the Marabouts, and the alliance of these clerics

with the more conservative forces in the region. The youth would prefer to see Islam become a progressive force in their societies. They resented the role that the Marabouts played in suppressing the school started by four Wahabists students in Bamako, patterned after the Alazhar University in Egypt. Though agreeing with their elders that Muslim girls should not be exposed to Christian education and western acculturation, many of the young people believe that unless modern subjects be introduced into the merdersas or koranic schools, the region would continue to suffer, and the Muslims would lose their political, social and economic positions in these societies.

The Muslims in this zone have not permitted the religious duties of Islam to interfere with their commercial and economic activities. People observe the fast when they could, recite the daily prayers when they have the opportunity, and now go to Mecca by jet aircraft rather than by road. West African Islam has not only adapted to the local milieu but appears to have the ability to adapt to other important economic changes. Urbanization and westernization are modifying Islam and shaping it into a religious system that could serve comtemporary people.

Christianity has been a greater force for change in this region if only because it came in with the conquerors, and garbed with the accoutrements of western industrial civilization. Convinced of the truth of their religion and believing that their views of marriage and the family were the only ones right, the missionaries attacked not only traditional African religions but African social institutions as well.[49] They often used their influence in France to force the hand of administrators many of whom were anti-clerical and not all of whom were convinced that African social institutions were valueless. When the missionaries and administrators worked hand in hand, they were quite effective. They introduced western education, new crafts and new agricultural techniques. Most of the clerks who served in the large companies in the region had at one time or another been educated by missionaries. The same thing could be said

of the modern craftsmen. Most of the cultivators of jardins maraîchers in and around the large urban centers had learned their craft from the missionaries.

Perhaps the most important role the missionaries played in this region was to provide alternative institutions and behavioral models for those persons who wanted to change. Many men wishing to avoid forced labor went to work for the missionaries, were converted and learned a trade. Many women objecting to arranged marriages or wishing to leave their spouses sought and received help from the missionaries to do so. The missionaries, often citing the relevant biblical texts, supported persons wishing to evade their responsibilities either to the traditional or colonial authorities. Both the missionaries and the administration knew that there were many "millet-Christians" among the converts, but even those persons who had converted for materialistic reasons were pulled into the European institutions of the missionaries. They or their children were the ones to break out of the traditional structures and adopt those institutions linked to a more dynamic if alien world.

The traditional African religions, linked as they were to family and lineage, have not been as strong as Islam to resist the forces of change that struck at the root of African economic and social institutions. The traditionalists had no difficulty recognizing in the gods of the Christians a supreme deity which was a little more concerned with the actual behavior of men than their own gods. They were more disturbed by the missionary attitude toward the ancestors who as far as the Africans were concerned were in some ways more rigorous in their insistence on morality than Jesus Christ. The ancestor lived on earth and had little pity on human beings who continued to do evil. However, with the growing nucleation of families the collective ancestors were no longer as effective as they used to be. People were reduced to dealing with specific ancestors who did not have the force of the hosts of ancestors. Moreover, these individual ancestors did not have the interest in extended

kinsmen not directly descended from them.

The cult of the earth did not act as a great constraint towards the cultivation of the land because many sacrifices to tellurian deities took place outside the communities and could be shifted from place to place if that proved desirable. Moreover, sacrifices to the spirits of specific localities could be made whether the area was under cash crop cultivation or in subsistence foods. Therefore, honoring these spirits did not pose insoluble problems. Likewise, the earth priests who were found in many of these societies and whose function was primarily linked to the earth could offer little or no restraint to economic development. Even in the traditional system they were often religious celebrants for the political authorities, and once these authorities had been conquered then the earth priests were also demoted. Sometimes, the earth priests felt that without the proper pre-planting œremonies, crops would fail, and drought and famine would devastate the land. They would then make sacrifices to the earth deities in secret, thus ignoring the missionaries, the Muslims and the administrators. Yet, these secret sacrifices had little effect on the behavior of the masses of people and did not affect their economic activities.

The people in this region have tended to be quite pragmatic in their attitudes towards their traditional healers. They feel that these medical practitioners worked in a different universe from that of western medical people. Like most peasants they believe in the efficacy of their own traditional medicines and go to the western doctor or clinic as a last resort. This kind of behavior has led to the widespread belief that Africans believe that hospitals are places where people go to die. However, close attention to the behavior of Africans in the rural areas or in the towns shows that they recognize the efficacy of western medicines. But they do not believe that foreign medicines could cure all types of African diseases, especially those induced by the acts of

evil persons. People resist using western medical facilities when they sense that these medical institutions are being used for other purposes, especially as vehicles for conversion. Again, they hesitate to use these facilities when they are convinced that the causes of their illnesses lie outside the realm of western medicine or knowledge.

There is no doubt that some of the social practices of the people in the area are inimical to good health and present a medical constraint on development. For example, the deposition of night soil in the areas around compounds provide the fertilizer without which maize and early millet, that break that "hungry period" (that period between the exhaustion of the previous year's harvest and the new crops), would not grow. Yet, night soil with its parasites infect and re-infect members of the family. The use of sand, in the absence of water, to perform the ablutions which are mandatory to Muslims before they pray also spread the parasites. Similar adaptions to the shortage of water in other areas of life have the same effect. Yet, the people are quite aware of the value of clean water and use it when they can. What many of them are unwilling to do is to expend an inordinate amount of energy and resources to behave in a way completely out of phase with their entire life style and inconsistent with the total amount of resources available to them.

Institutional Inadequacies in the Face of Contemporary Problems

Independence presented the countries in this region with almost insoluble problems. Except for Senegal which had in Dakar (former seat of the French West Africa) a capital worthy of a modern nation-state, all of the other countries felt constrained to use their scarce resources to build adequate administrative centers. In the case of Mauritania, the capital, Nouakchott, had to be created literally out of the desert. These projects cost a great deal of money. According to the 1970 International Monetary Fund survey, "The increase in ordinary budget expenditure [in these states was]...necessitated by news services relating to representation abroad, defense expenditures, postal service, and telecommunications -- expenditures previously borne by France. Expenditure has also risen with expansion in administrative machinery, higher wages and salaries, and the need to subsidize new public and semipublic enterprises".[50]

Some of the money for administration and social services certainly came from foreign sources, but a great deal of it was raised by taxes from the rural agricultural and pastoral populations, and by using any savings the states may have possessed. The problem is that few of these new states have yet been able to develop the economic base with which to support these services. Mauritania was fortunate in discovering and exploiting minerals to help with its development. The other states were less fortunate. The IMF survey found that despite great efforts, most of these states were not advancing economically. For example,

> Senegal has achieved little improvement in its economy, remaining heavily dependent on the earnings from the export of ground-nuts, which have steadily declined in price on the world market. Many Senegalese industries, originally created to serve all of French West Africa, have found themselves with an excess capacity and accordingly have had to adjust their operations to a

> much smaller market. Although Upper Volta is poorly endowed with natural resources, the Government has tried through planning to stimulate economic growth, which, since independence, has barely kept pace with increases in the population. The broad objective of the Government's development effort is to encourage the productive sectors of the economy and to limit expansion in current budget expenditures that would follow enlarged social services." [51]

The irony is that none of the new governments in this area have been able to effect substantial changes in any of their social institutions. As a result of inter-war and post war development of health services, the population of the six Sahelian countries passed twenty million (today it is between 22 and 23 million) and are increasing at the rate of about 2.0 to 2.2 percent per year. Even if the governments had had a population policy, they do not have the means to institute this policy -- besides, regulating population growth is a more complicated problem than planners are willing to admit. The result is that the populations are still growing; and the people are demanding employment, goods, and services. When these are not available in the rural areas, people migrate into the urban areas, putting pressures on weak urban economies and depriving rural sectors of their labor and the government of rurally-derived taxes. The failure of these states to provide economic opportunities to their citizens has contributed to political instability in the region. Economic problems are doubtless behind the unrest reported in many of these countries, and the current drought will certainly aggravate the situation.

There are still many questions, arguments, and discussions about whether the governments in this region were aware of their growing plight; whether or not their alleged early pleas were heeded by a world engaged in other affairs; whether the aid that was sent was too costly, too little and too late; and

whether the aid that was sent was badly used, or not sufficiently acknowledged or appreciated. This is to be expected given the extent of the disaster, the passions it aroused and its economic, political, social and technical implications. What is not open to question is that the ecosystem which has been under enormous pressure for decades has been badly impaired, and that unless the reasons for this are understood, all the discussion will be in vain and will not lead to the restoration of equilibrium or the elaboration of a larger and more viable ecosystem.

If, as it is clearly possible, the macro changes in the world's climate are independent of man, then Homo sapiens sapiens like the Neanderthals before him (but with a more complex culture) may have few choices open to him. He might either migrate from the northern part of the area, use his efficient technology to change the local environment, or simplify his socio-cultural systems to lighten the pressures on that area's meager food resources. If, however, there is reason to believe some environmental scientists that climatic changes are being accelerated by "man-made air pollution" which has had an adverse affect on the entire biosphere, then we are dealing with a major political problem. It might mean that those ecosystems contributing to the macro climatic changes may be asked to make changes within their subsystems so as not to jeopardize the habitat of all mankind.

The political implications of this suggestion are immense since the issues involve the world's strongest nations whose very power is due to their control and use of much of the world's energy and resources with the resulting pollution. Which world agency has the power to compel these states to end pollution, or to impose sanctions if they fail to comply? Can the world continue to tolerate anarchy in its ecosystem network at the expense of the survival of its weaker or more marginal ecosystems? Will we attain a new plateau in human cooperation or understanding, or are we faced with possible ecocides at a time when mankind

is seeking to stop genocide? But even if this disaster was induced by the larger ecosystems, was there nothing that the local systems could do to protect themselves? There are reasons to believe that this ecosystem has been deteriorating so badly that it could not tolerate even the slightest perturbations within it.

A number of scholars, both African and outsiders, have identified the factors within this ecosystem that have exacerbated its difficulties.[52] These include: the progressive destruction of the vegetation caused by an increase in domestic animal populations; the accelerated destruction of the light soils due to the burning of the grasses, shrubs and trees either to provide new leafage for the animals, or new land for cultivation; local climatic changes caused by the destruction of trees and forests by people seeking more fuel (this is especially severe around the burgeoning urban centers where modernization and changes in life styles necessitate the use of more fuel); and a growing human population which is especially dangerous since man is more destructive of his habitat than any other living creature. The view of these scholars is that unless some means can be found to halt the vicious cycle within this ecosystem, there will be disaster. Yet here again the question is whether any change is possible within the ecosystem, or whether enough funds will ever be available to ameliorate the situation.

At some point, the people of this region may have to face the possibility that their very fragile and marginal ecosystem can never be truly viable in the contemporary world. True, at certain periods in the past, there were more independent societies in the region than there are today, but it is also true that the Sudanese and Sahelian societies achieved their greatest florescence when they were quite large. One only has to think of the past greatness of ancient Ghana, Mali and Songhoi. These empires grouped various

types of societies, inhabited different environments, and had rather complex economies. We also know what happened when these ancient empires failed: famines, wars and disasters. Is the same thing happening today? The French initially created small colonies, but soon found it profitable to create a federation in the region, link the colonies by roads and trade. And when the total area was threatened by economic disaster in the 1920's they dismembered the Upper Volta colony and distributed its parts to the surrounding territories to increase their viability. The French obviously had other interests in mind when at the eve of independence they presided over the balkanization of the African federations.

Almost all of the post-independence attempts at larger and more viable political entities foundered on the shoals of political ambitions -- not on economic difficulties. This was true of the Mali Federation grouping Senegal and the Soudan, the West African Economic Community, the Organization of the Senegal River States, and others too ephemeral to matter. The experience of the Mali Federation is a case in point. When the formation of the federation was announced, Leopold Senghor, the President of Senegal declared: "We have made a good start in Mali by uniting populations whose natural characteristics -- climate, soil and blood, language and customs, art and literature -- are similar. Senegal and the Soudan constitute, moreover, a rather homogeneous and relatively rich economic ensemble."[53] When the Federation broke up, Senghor gave this rationalization:

> "We understand the present strength of territorialism, of micronationalism a euphemism for 'tribalism'? in Africa. We forgot to analyze and understand the sociological differences among the territories of what used to be French West Africa, differences that the colonial administration had reinforced."[54]

It is doubtful whether micronationalism was the important issue in the dissolution of the Mali Federation. Modibo Keita, President of the Soudan believed that "there was a contradiction between the economic, political and social systems to which the leaders of Mali (Soudan) and Senegal belonged." Some disinterested scholars felt that "basic opposition lay in the fact that in the terminology of the Union Soudanaise the UPS (Union Progressive Senegalaise) was essentially a 'bourgeois' party, whereas the Union Soudanaise was a 'socialist' party".[55] In other words, not "tribalism" but differing political ideologies was the cause for the dissolution of Africa's first precolonial federation.

Despite occasional disagreements between political leaders in the nation-states of this region, the rural people have been crossing both environment and political boundaries in the pursuit of a better life. Agricultural populations have been moving over the landscape in search of better lands unhampered by political considerations and often in spite of sociological and politcal constraints. And when the rural youth can no longer satisfy either their traditional or modern desires, they have not hesitated to migrate to the larger towns within their own countries or into plantation or industrial centers of neighboring ones. Similarly, the pastoral populations have continued their transhumance cycles across national boundaries, and in the absence of valid reasons for sedentarizing have resisted the efforts of governments to keep them in place. Traders, too, have continued to cross boundaries, and when frustrated by a change in currency as when Mali left the franc zone, resorted to contraband to continue their activities.

The smaller countries in this region had neither the infrastructure nor the resources to meet the crisis in their ecosystem. First of all, their communication systems were so weak that even when the local leaders knew the scope of the problem they were unable to dramatize it to the outside world.

True, the African ministers met in Ouagadougou in March to plan their strategy, but it was only when such international papers as Le Monde, The Manchester Guardian, The New York Times, and The Washington Post picked up the story that the world became alarmed, and the personnel from the United Nations, USAID, and the U.S. State Department could have their voices heard.

The major problem that the relief agencies encountered was the lack of local structures with which to link. This was due as much to different administrative, social and political traditions as to differences in scale. Western countries with hundreds of millions of inhabitants, with scores of political units, and with budgets often running to billions of dollars simply do not have either the traditions or the structural elements to relate to countries which are sparsely populated with embryonic political units and with very small budgets. Consider the problems of the United States of America when dealing with the six countries whose total population is comparable to that of the state of California and whose annual of $600 million is two-thirds that of Washington, D.C. People from these two ecosystems must have difficulties conceiving the problems of each other since they do not have common points of reference. These difficulties are compounded when the interactors do not even realize that they face structural differences as well as socio-cultural ones. The result is that even with the best will in the world, people from large scale societies cannot plan effectively for smaller-scale ones. When failure ensues, the people involved charge each other with incompetence or bad faith and in the case of foreigners in West Africa, trot out the rationalization: WAWA or West Africa Wins Again which means that nothing can be done to solve the problems of that area.

The people of the Sudan-Sahel-Sahara region should be encouraged to create a larger ecosystem to deal with their present problems if only because there may be no other way to do so. For example, it might well be that the northern

part of the Sahelian zone where pastoralist populations often compete with marginal agriculturalists should be given over completely to pastures. If this is so, then the agriculturalists there should be able to migrate to coastal regions. This, however, is a political decision that only federated states could make. Again, it is quite possible and necessary for the water resources of the area to be improved by building more local dams, and by digging deeper wells. But the long-range solution to the water problems of the entire Sahel might only be found if huge dams are built on the Upper Niger at Nianden and on the upper Senegal river at Manantali. Moreover, if the electric potential of the Akosombo Dam in Ghana could be linked to the electric power from the other complexes on the Senegal and Niger, then electricity could be obtained to pump water from wells in areas far from the river systems.

Cooperation between the states in the region could facilitate the use of weather and Earth Resources satellites to chart changes in the weather, to locate underground rivers, discover fertile areas, inspect crops, and locate mineral resources. Yet, these costly instruments are only economical if used over vast areas. Moreover, the opportunities suggested by their use might require all sorts of technical schools for agronomy, livestock science and mechanical skills, but single states may be too poor to afford any or all of them. However, when all is said and done, the issue of money remains. Meanwhile, sufficient funds and technical aid must be pumped into this area so that its contemporary populations can use their resources to live modern lives, while at the same time restructure their social institutions so as to harmonize with the realities of their environment.

Case Study No. 1: Peanuts in Senegal

The ecosystem of the Sudan-Sahel-Sahara area is so delicately balanced that most attempts at drastic change have faltered. Not only did the early African empires founder when they overreached themselves, but the first European attempts at economic development were disastrous. In 1817, Colonel Schmaltz received permission from the Lebou leader, Moctar Diop, to introduce some two hundred European emigrants from the Société Colonial Philanthropique, but this small group was soon liquidated by the climate. In 1819, the French succeeded in getting a concession of land and developed a model farm, La Sénégalais, on which they installed one Richard Toll, an agronomist, to conduct the first experiments in African tropical agriculture. The result was to be familiar: "Little by little, the unforeseen difficulties led to its /the farm's/ total abandonment".[56] Nevertheless, the French held on to the area and sought in vain more concessions.

While the French could initially do little with the agricultural potential of Senegal, the local people had successfully integrated an American-derived crop, the peanut, into their economy, and were producing it in potentially exportable quantities. In 1840, Jaubert seeking some way to exploit the crops growing in the region sent some 722 kilograms of peanuts to Marseille as a test. Richard-Molard records that "success was immediate; it was necessary to send machines, to introduce railroads and later to send steam vessels. From the time of the July Monarchy, the Saint Simonians were active. Once their man was in power, the era of hesitation ceased. Napoleon the Third proceeded with the occupation /of Senegal/ and imperialistic colonization became an economic necessity".[57] By 1885, the area served by the new railroad had started to produce a great deal of peanuts. Some 45,000 tons of unhusked peanuts were produced in 1884-1885 and by 1914 about 200,000 tons were exported. By the beginning of World War II, Senegal was producing more than 600,000 tons of peanuts annually.[58]

Initially, the Senegalese peasant had no difficulty producing crops for export. His traditional methods of cultivation which involved a limited use of fertilizers, especially in the village fields, and the availability of land permitted him to satisfy his subsistence needs and to produce a surplus which could be exported The establishment of a transportation infrastructure and the development of commercial possibilities by the colonial regime provided a potential outlet for the fruits of his labor and permitted him to increase peanut production "without reduction in food production".[59] Moreover, from 1885 to 1914, the peasant felt amply rewarded for his work. Indeed, the traditional rulers and Mourides in the rural areas of Senegal were able to mobilize the peasants to produce more and more peanuts, and under their initiative labor migrants called navetanes came from all over French West Africa to work in the peanut fields However, between 1925-1940 the situation started to change radically: the price of peanuts started to deteriorate sharply on the world market; food production started to suffer while people increased the production of peanuts; and the growing population was faced with a shortage of land. World War II only served to aggravate the situation.

In 1946 after the end of World War II, the government launched a plan at the Richard-Toll agronomic station to develop mechanized rice production through the irrigation of the Senegal river's delta. The intention was to meet the food needs of a peasantry locked in to the production of peanuts and importing a great deal of rice. The hope was that in ten years time some 50,000 hectares of rice could be brought into cultivation thereby assuring the people an adequate food supply.

The first experimental plot of 120 hectares was planted in 1947 with the use of mechanized techniques. Indeed mechanization was an overriding characteristic of the scheme. Every phase of the work was automated. Machines were used for seeding, fertilizing, harvesting, threshing, ensiling and even for bagging the rice.

Other techniques --such as aquatic germination, which eliminated the need for transplanting -- kept the use of unskilled labor down to a bare minimum. And when the first fields yielded as much as 24.6 quintals per hectare of excellent quality paddy, there was an indication that the Richard-Toll experiment had found the answer to Senegal's food problem. This was allegedly accomplished "...without either the displacement or the participation of the local population".[60] Officials felt that in Richard-Toll they had created a "modern" rice producing operation.

It appears that the officials had not fully understood the principle of ecological interdependence Natural catastrophes soon began to take their toll of rice production. The first problem was a salinization of the soil. This was finally solved by closing off the flow of salt water which, during the dry season, came upstream a considerable distance. The second problem was dust storms, but not much could be done about them. The third and most devastating problem were the more than 45 million queleaquelea birds which came in droves and ate the crop. In 1952, they destroyed half the harvest. The administration launched a massive effort to rescue the project and spent 500 million francs CFA in an anti-avian campaign.[61] In 1953-1954 some 90% of the birds were wiped out, but at a great cost to the project.

In spite of the heavy expenditures and degree of technical success, rice production in Senegal began to stagnate after 1956. Average yields, which had reached a high of 30.9 quintals per hectare in 1956, dropped to 26.4 quintals per hectare in 1960.[62] The project manager attributed this decline to the re-appearance of the queleaquelea birds and the invasion of the paddy plantation by wild rice. Nevertheless, they felt that the use of modern techniques and high-yielding strains of seeds had been a success.

Whatever the case, the Richard-Toll experiment did not succeed in producing sufficient rice to cover Senegal's needs. In 1960 the project's total rice production (about 15,000 tons) represented only 10% of Senegal's total rice consumption. More serious perhaps was that the scheme did not help Senegal solve its heavy unemployment problem. During the harvest period, when the largest labor contingent was used, the project employed only 18 men for every 100 hectares under cultivation. At other times of the year the project work teams consisted of only 6 men per 100 hectares. This low employment record might not have been a problem had the project been economically successful. But by 1960 the total cost of the operation had been some 2,700 million francs CFA. The results obtained both in terms of production level and the provisions of jobs were mediocre given the investment made.

The final act in this tragic drama is that given their inability to pay for food with a decreasing amount of money obtained from peanut production, a growing number of Senegalese peasants are returning to a subsistence economy.[63] There are those who would interpret this trend as simply one more indication of the reactionary attitude of "tradition-bound" peasants. In fact, the contrary appears to be the case. This incipient peasant revolt appears to indicate a willingness to break away from "tradition" in the sense that being traditional means doing something simply because one's superiors in the social, political and religious hierarchies desire that it be done. The Senegalese farmers are now making an assessment of their own economic interests and are abandoning peanut cultivation in a search for better alternatives.

During the independence struggle and afterwards, the Senegalese political leaders suggested that they were seeking to elaborate a program of "African Socialism" based on indigenous concepts of communal solidarity. They planned to abandon the model of the Sociétés Indigènes de Prévoyances instituted by the French during the colonial period 1) to organize and control the productivity

of the rural populations; and 2) to mobilize their cultural surplus to pay for investment in other economic enterprises. The politicians also said that they would eliminate the exploitative middlemen who had sprung up as profit-making intermediaries in the commercialization of peanuts and create peasant-based marketing cooperatives. Membership in these cooperatives was to have been voluntary, but the series of government measures which forced the private dealers out of business also obliged any farmer who wished to commercialize his crop to deal with the cooperatives.

The problem for the peasants and for the Senegalese government is that these changes did not bring development, and now the peasants are rejecting peanut production. Besides being forced to use the cooperatives, the peasants found that new cooperatives followed very closely the model of the former SIPs. Moreover, some independent analyses showed that despite the cooperatives, the interest of producers had been subordinated to those of the central bureaucratic elites and the politicians. In fact, some 47.2% of Senegal's national budget is used to pay the salaries of the bureaucrats.

The situation became untenable when in 1967 the French withdrew the price subsidies from peanuts, and despite a valiant attempt of all concerned to keep revenues up by increasing peanut production;the incomes of the peasants continued to decline. The peasants--objecting to having to buy millet and rice in order to have enough food to grow peanuts whose price had been declining--stepped back, re-evaluated their position, and stopped producing peanuts. The decision of the "unchanging" peasant to cease peanut production in order to grow food for local consumption will undoubtedly have grave implications for the Senegalese economy. What no one can say, however, is that the peasants do not have the capacity to change.

This case study of the problem of peanut production in Senegal, and the fate of the Richard-Toll rice experiment demonstrate that development planners

involved. The natural environment must be watched in order to forestall salinization; the biota must be observed in order to avoid such disasters as the queleaquelea birds and the infestation by "wild" rice; and the effect of prices and economic policies on the human populations must be carefully thought out. The total mechanization of rice production at Richard-Toll was bound to have a profound effect on that project's contribution to Senegal's economy. Here was a case where the too often unquestioned efficacy of Western agricultural techniques turned out to be inappropriate in a particular African context. For Africa, this did not turn out to be true. Indeed over the past few years economists and planners have come to advocate the use of labor-intensive methods for African agricultural development schemes. Since both unemployment and underemployment are now serious problems in all the countries of the Sahelian zone, any scheme which attempts to develop agricultural production should also give careful consideration to the factor of labor. And since environmental factors have contributed to the Sahelian problem, attention must be paid to the interrelationship of the physical, biological and sociological aspects of this ecosystem.

Case Study No. 2: Office du Niger

The Office du Niger project in the French Soudan (now the Republic of Mali) is a case study in how not to attempt economic development in the Sudan-Sahel region. In 1919, one Mr. Belime, an agronomist, led a mission to the inland delta of the Niger River to determine whether it was possible to irrigate the region to grow cotton for the Metropole's textile industry. If this proved feasible, then it was planned to bring some 750,000 hectares of land under cultivation to produce 300,000 tons of cotton annually. Apparently, the agronomist had misgivings about the practicality of such a project given the low density of population in the area. This objection was met by the suggestion that about one and one-half million people could be transferred from Mossi country in Upper Volta to "colonize" the region and produce the cotton. Finally, the views of the Governor-General Carde prevailed, the project goal was modified to develop some 510,000 hectares of cotton land, and 450,000 hectares of paddy fields, the latter to feed the people of Senegal. Mr. Belime was then placed in charge of the project.[64]

The Office du Niger, as the project was named, was officially inaugurated in 1932 after 12 years of preparatory studies and pilot projects. But after a quarter of a century of attempted agricultural development, the Office du Niger's balance sheet was pretty grim. Of the nearly 1 million hectares that were to have been irrigated, in 1953 the actual land reclaimed did not exceed 25,000 hectares. Instead of the projected 1,500,000 African colonists, in 1955 there were less than 25,000 inhabitants located in 4 main colonization centers. And as for production, during the years between 1944-1955, rice varied between 10,000 and 20,000 tons a year, while cotton fluctuated between yearly averages of 2,000 and 4,000 tons. This last figure is a far cry from the original projection of 300,000 tons of cotton. These rather disappointing results had cost the French and African tax payers an estimated 40 billion francs CFA by 1956. This failure

has been attributed to the poor quality of the local soil; attacks by cotton parasites, locusts and the ubiquitous queleaquelea birds; and the low quality of the participating farmers. But here, again, faulty planning and an ignorance of the local ecosystem appear to have been a major cause of failure.

The technical problems of dam-building and canal dredging at the Office du Niger were simple in comparison to the social problems created by the decision to transfer large numbers of people to this labor-deficient area. The administration had hoped that laborers from throughout the Federation, especially from Upper Volta, would voluntarily resettle as colonists on the project's land. This hope was not realized and the decision was made to requisition labor, especially Mossi from Upper Volta (a practice that continued until abolished in 1946). This meant that the project managers were not dealing with free men, but with people who had to be watched and controlled less they ran away. The colonists were forced to work from 6:00 a.m. to sunset and their movements were restricted after work. Thus even though the cooperation of the workers was obviously crucial to the project's success, once force was used, the administration's efforts to accomodate the needs of the colonists were to prove inadequate and ineffective.[65]

The Mossi had little difficulty adapting to the environment at the Office du Niger since they came from almost the same climatic zone. Nor did they have too much trouble learning the new techniques for cultivating rice and cotton according to modern methods. And after an initial period of illness, the colonists adopted rice as a staple even though suspecting that it was not as nourishing as their customary millet diet.

The colonists had a great deal of difficulty adapting to the new social forms which the project administrators had created in an effort to replicate traditional Mossi institutions. For example, the attempt to reproduce the traditional Mossi residence pattern was meaningless because of the absence of lineage

segments for which this residence pattern had been developed. Equally incomprehensible for the colonists was an attempt to install the familiar political organization but instead of using as chief a nabiga (child of the royal family) who was accustomed to using the traditional sanctions of the chieftainship, the project manager used a Tengsoba, a person who in Mossi country had supernatural but no political power. The Mossi were also confused by the policy which specified that they participate in the administration of the project through membership in "indigenous agricultural associations" when in fact they had no control over administrative matters. Thus, unsure of their rights, unaware of the goals of the project, and inhibited by artificial traditions from creating meaningful social relationships at the Office, the Mossi did not identify with the project, nor its objectives.

Meanwhile, the objectives of the project were being made irrelevant by the economic changes in the federation. Initially, the plan was to grow more cotton for export than rice for local consumption; therefore, the land was divided into 6 hectare plots of which 4 hectares were to be devoted to cotton and 2 hectares to rice. However, the colonists soon realized that they received more money for rice than cotton,and as soon as they were freed from the pre-war constraints, planted more rice than cotton. By 1955, rice production in the Office du Niger had outstripped cotton by more than 10 to 1, and this represented a major victory for food crops over purely cash crops There was still one important factor that should not be overlooked: i.e., this rice was being grown mainly for Senegal. As we have seen, more and more Senegalese farmers began growing peanuts, rice imports into that colony began increasing rapidly. And an effort to counter this trend, the Federation's 1946 Plan gave absolute priority to increasing rice culture over that of all other food crops. Thus, the peasants of the Office du Niger were cultivating rice for Senegalese farmers who were cultivating peanuts for export. The problem was that neither the Senegalese

peasants nor the Mossi colonists were profitting from their labor. The Senegalese farmers could do little to increase the price of peanuts on the world markets, and the Mossi colonists would not produce enough rice to feed the Senegalese. In fact, by 1953 the rice they produced represented less than 10% of the Federation's total food crops.

The grandiose Office du Niger scheme fell far short of its goals because technical reasons aside, it failed to take into consideration the complexities of the human social institutions. The economic planners had opted for a large scale, spectacular enterprise, and had misunderstood the possibilities and constraints inherent in the social structure of the participating populations. Criticized in the past for having ignored traditional social institutions the planners had sought to replicate these institutionsin the hope of facilitating ease. The problem was that they were operating in a new environment where new economic activities had created new needs and had made changes in the traditional institutions inevitable. The planners may have been more successful had they permitted the colonists to modify their indigenous institutions to fit these new needs, then to be forced to adjust to institutions that no longer fitted their new needs.

Case No. 3: Cotton Production and Labor Migration in Upper Volta

Another example of the dismal failure of attempts at drastic economic change in the Sahel zone took place in Upper Volta. In 1919 the new French Minister for the Colonies, Albert Sarraut, drew up a colonial development plan (La Mise en valeur des colonies française) to build railroads, roads, plantations and other enterprises throughout West Africa.[66] The object was to develop the colonies there so that they could help France recover from the ravages of World War I. In the newly created Upper Volta colony, an equally new Governor, Edouard Hesling, sought to implement this plan. He suggested that a colony "with such diverse products and such a dense population, could attain an exceptional level of development by acquiring those economic infrastructures that ensure prosperity."[67] Hesling believed that the Upper Volta could and should be able to produce and export "thousands of tons" of cotton as soon as an easy and economical way of shipping could be established. By 1925, he had built some 6,000 kilometers of roads in Upper Volta representing at that time about one-eighth of the network of roads in the entire West African federation. Meanwhile reports from Upper Volta commented on "the enforced enthusiasm with which the natives, under Mr. E. Hesling, have thrown themselves into agricultural labor and in particular into planting cotton."[68]

When the Voltaics were not planting cotton and building roads, they were being recruited for both the colonial army and for work in other colonies. In 1922 the Upper Volta was required to furnish

> 6,000 workers for the Thies-Kayes railway, replaceable every six months, and under the same conditions furnished 2,000 laborers to build railroads in the Ivory Coast. Similarly, and with the consent of the chief administrator of the colony, it was possible to recruit a thousand workers in the regions of Ouagadougou and Bobo-Dioulasso for private corporations in the Ivory Coast.[69]

Between 1921 and 1925, the Upper Volta furnished the Thies-Kayes and Ivory Coast railroads with nearly forty-nine thousand men. In 1924, the Upper Volta colony provided an additional 318,814 man-days of labor not including prestation labor and other local labor. Albert Londres reports that in the late 1920's the Upper Volta was considered a "reservoir" of manpower of 3 million people. Everyone went there to get men as they would "go to wells for water".[70]

The Governor's plan to use Mossi peasants to build railroads, work on the plantations in the Ivory Coast, and also grow cotton in their own country created severe strains in Mossi society and almost wrecked the Upper Volta. Many Mossi laborers reacted by fleeing their communities altogether. Those others who were not conscripted attempted to adapt to the need for paying taxes in currency by migrating to the Gold Coast where their labor had the most value. The problem for Hesling was that neither administration-induced labor migration nor seasonal migration was conducive to the production of cotton. The reason was that the Mossi never prepared fields exclusively for cotton, but mixed this crop with the growing of millet during the month of August. Millet was harvested in late October and early November, but cotton could not be harvested until December. As that would usually be too late for men planning to migrate, they refrained from planting cotton. Other factors were involved, however, in the decline of cotton production. It was, in fact, more profitable to migrate for work than to grow cotton. Furthermore, families who were short of men owing to migration or to forced labor devoted most of their energies to the cultivation of food crops rather than to the weeding of cotton plants.

A second constraint on the production of cotton during the Hesling regime was the resistance of people to working under the supervision of soldiers or of their chiefs in the so-called <u>champs du commandement</u> . As to be expected the ordinary peasants were quite unhappy with these conditions. Ossendowski who visited this region reported that:

> Cotton is an artificial crop and one the value of which is not entirely clear to the natives. The chiefs with their superior intellect, seeing the profit to be obtained from the plantation of cotton, are continually enlarging the area of the fields, and resort to draft animals, ploughs, manures, and even partial irrigation of the fields; nevertheless, the great mass of the population submit rather unwillingly to those instructions of the administration which aim at the development of cotton cultivation in the colony. [71]

In spite of champs du commandement and all other methods, cotton production in Upper Volta did not meet the expectations of the administration. The visitors to that area such as Ossendovski saw the reasons clearly and Albert Londres was surprised that some administrators should be "astonished that the Sudan and Upper Volta no longer produce cotton." However, a very young administrator saw quite clearly the relationship between faulty economic policies and the plight of the population. Robert Delavignette, who was later to become director of political affairs in the French Overseas Ministry, protested. He declared:

> In the course of ten years, 93,000 men were thus sent far away. They came back without having learned a trade; but on the other hand, had lost touch with their families, which had suffered by their absence and which could not be regenerated by their return. Fields had been neglected, betrothed girls had not been married, wives had become undernourished, children had been poorly cared for. The recruiters paid no heed to local labor customs. The young leaders of age associations and rural cooperative organizations were not seen (in their true roles) as monitors of peasant life and agriculture, but were seized as ordinary laborers and in preference to others because they were stronger. French Africa has lived on Voltaic labor in the Sudan and notably in the Ivory Coast. [72]

By 1929 when the depression collapsed the cotton market, the economy of Upper Volta, was in ruins. People could not pay their taxes; the capitalists abandoned the country and many of the roads that were too extensive, too little

used, and too difficult to maintain, were left to deteriorate. More and more young people who could not earn enough money to pay taxes or meet their familial obligations "left on seasonal migrations to the Gold Coast where they worked on cocoa plantations and on the roads under much better conditions than in the Volta, and for better pay than in the Ivory Coast. There were years when 80,000 men left to contribute to the fortunes of the Gold Coast."[73] Finally, the Colonial Minister ordered the Upper Volta broken up stating that this "would permit appreciable savings, and would make the administrative and technical personnel serving in its capital available for general service."[74]

An attempt was made to treat a local ecosystem with its societies, natural habitat, and plant and animals resources as a plantation, and when this attempt failed, the colony was liquidated. District Commissioner Delavignette who had witnessed this tragedy, bitterly commented that the Upper Volta with its faceless masses had posed too formidable a challenge to the administrators:

> The more they tried to impose upon it an open economy with a pattern or roads, urban centers, and cotton fields; and the more they tried to discover the vital principle of that economy so that they could establish a new harmony between the land and those faceless masses, the more they broke down the old, established, traditional economy... No original methods or powerful tools were used, no inventiveness nor clairty of purpose was shown. This was but a megalomanic copy of old patterns of mercantile exploitation, and in this heartland, the result was futile and joyless work for those faceless masses.[75]

One of the unforeseen results of the disastrous attempt at development in Upper Volta was the institutionalization of labor migration among its population. People who had resisted expatriation to colonize the Office du Niger project in the Soudan and disliked being sent as forced laborers to the Ivory Coast now voluntarily leave their home communities to work abroad, and slip through police lines designed to prevent them from entering the neighboring countries to seek

work. The reason, of course, is that the impact of the West has created new needs and people now migrate voluntarily to satisfy these needs. But as important is that Mossi and other Voltaic societies have made adjustments in the "traditional" culture to accomodate labor migration and integrate it into their life style. In the past, much of the heavy work in preparation for planting -- like clearing the land, was done in work bees where a group of men from many families got together and all worked on one person's field. Now since most of the men are away during the time this preparatory work has to be done, every available hand is needed for the family field, and there are fewer work bees. Similarly, whereas individual family members used to divide up the day between time spent on the collective plot and time spent on the family plot, the shortage of labor has obliged many to abandon their "pocket money" plots. This last adjustment, however, has been compensated for by the fact that the Mossi men earn their spending money by periodic migrations, and the women are able to sell food to the migrants who pass through their villages either to or from their destinations.

An Epilogue: Contemporary Attempts to Modernize Agricultural Techniques in Upper Volta.

Attempts by an organization called S.A.T.E.C. to modernize agricultural practices among the Mossi in Upper Volta have been under way since 1962. The guiding strategy was to increase output by introducing animal traction, so as to make it possible to bring larger areas of land under cultivation. During the course of the experiment, other objectives were changed or modified as they proved unworkable, but the diffusion of the use of animal traction remained the principal concern.

By 1967 all of S.A.T.E.C.'s operations had been pronounced dismal failures, and the effort to promote new agricultural techniques on a wide scale was abandoned. Equipment is no longer distributed on credit terms, but must now be bought for cash. The amazing thing is that a significant number of people are

actually buying the implements on their own accord. In other words, in spite of the failure of the government's program as elaborated by S.A.T.E.C., the efficacy of the new techniques has been understood. The problem, then, is how to harness this recently acquired awareness in order to promote change.

When the scheme was initially undertaken, one of its primary objectives was to encourage the production of food crops. But in 1964, when it became evident that the operation was running into trouble, the orientation was changed towards promoting the new techniques for the production of cash crops. It was felt that unless the methods could bring a profit, the peasants would have no interest in adopting them. Besides, the price of the plow and harness and fertilizer had to be reimbursed by the farmers at harvest time, and the best way of assuring for the repayment of loans is to encourage the farmers to produce cash crops.

During the colonial period the French failed in all their attempts to introduce cotton as a cash crop into the Mossi region. And when S.A.T.E.C. tried, they met with the same kinds of constraints. The decision to encourage commercial crops rather than food crops turned out to be inappropriate. There was discordance between the economic objectives of the project and the basic needs of the population. Food, water, and money -- and in that order -- are the major preoccupations of the Mossi peasants.[76] Until the first 2 needs have been adequately provided for, the third one plays only a minimal role in their calculations.

An analysis of the pattern of application of the new techniques is instructive. In the areas which primarily produced food, the peasant readily accepted modern agricultural methods. This was true even in areas of poor

soils where animal traction was used to extend the acreage under cultivation, in an effort to increase food yields. Peasants have been willing to go into debt to obtain the techniques to squeeze the maximum amount of millet out of their reluctant soil.[77] In contrast, the peasants in primarily cotton producing areas have been reluctant to invest their money in modern equipment. They refuse to go into debt for cotton. This posed a problem for S.A.T.E.C. whose initial agricultural development plan envisaged a 60% increase in surface area cultivated for cash crops, but saw an unexpected 10% increase in acreage devoted to food crops. Moreover, these food crops were either consumed immediately or stored for future use by the family. They were not commercialized. S.A.T.E.C. concluded that many farmers had resorted to labor migration in order to pay back the loans advanced to buy the equipment, rather than sell their food stuffs. Their behavior was quite different from that of the cotton producers who has no faith in the world market and refused to go into debt for questionable results.

The lesson that can be drawn from the S.A.T.E.C. experience is that the peasants would accept new agricultural techniques when assured of receiving some benefit from them. These farmers were willing to produce foodstuff which they could use. In contrast the Mossi peasants were unwilling to produce an economic good capable of generating capital for reinvestment to promote what officials consider to be development. Perhaps remembering past experiences, they are unwilling to take chanc s with their scarce resources. The problem for the Upper Volta officials is largely one of finding an approach which corresponds to the ideas and needs of a significant portion of its population. The contemporary government has to find a way of living down the past.

Case Study No. 4: The Failure of Peanut Production to Increase the Standard of Living in Niger

In more than one instance it has been demonstrated that overconcentration on the production of peanuts as a cash crop can result in a net deterioration in the standard of living of the peasant producers. A study conducted in Niger analyzed the relationship between the size of the millet harvest and the expansion of peanut cultivation in the Hausa province of Gobir.[78]

Data were collected to determine the relative quantities of peanuts and millet produced in the provincial capital of Tibiri as compared with 3 of its outlying villages when the people of fundamentally similar agricultural areas devoted almost equal time to cultivation. Whereas an average of 8.2 sheaves of millet per person were grown in the villages, Tibiri residents averaged 10 sheaves apiece. In contrast, with peanut production the situation was reversed. The three villages produced an average of 4.6 sacks of peanuts per household whereas only 2.6 sacks per family unit were produced in Tibiri.

There were other striking distinctions between the villages and Tibiri: despite being linked to the world economy through peanut production, the villagers earned a smaller income and ate less well than the Tibirians. They consumed 375 grams of millet daily in contrast to 550 grams in Tibiri. Secondly, whereas the villagers' source of income was the sale of their peanuts,[79] the Tibirians grew and commercialized vegetables, and earned extra income from either commerce or artisanship. Having many more possibilities of earning money, the people in Tibiri were able to hire laborers to help work their fields, and could devote less acreage to peanuts. The conclusion was that peasant farmers restricted to peanuts as their sole source of income were comparatively less well off than their Tibiri neighbors, even though they produced more of a crop linked to the export market.

Case Study No. 5: The Logone Valley Project in Chad

The failure to take the social institutions of the Massa people into consideration caused serious problems in the Logone Valley project in Chad. Concerned that Lake Chad was drying up, the administration ordered a study of the basins of rivers flowing into the lake in the hope of controlling flooding with the additional objective of instituting economic changes especially the growing of cotton. Intimately affected were the Massa people, a semi-nomadic population which lived along the Logone river, retreating with their animals to the highlands during the six months of the year when the river was in flood, and returning in the dry season to fish and to cultivate millet.

Initially there were no studies of how the riverain populations would react to the new scheme nor of whether the soil in the Logone valley was good for cultivation or could support large dams. But in 1952 dikes were built and land bulldozed for cultivation. By 1953 the project ran into difficulty. First of all, the dikes, which were simply rennovations of older structures, started to break. This was handled by patching up or rebuilding sections of the system. More difficult to solve were the agronomic and human problems. It was soon found that the soil was not suitable for growing cotton, and by 1958 the private firms that had reserved land along the dikes had either abandoned them or had switched to the production of rice. But even so, the project was deemed both a technical and economic fiasco. Already close to 1 billion francs CFA had been spent, to say nothing of the continuing yearly expenses of keeping up the dikes and maintaining the drainage canals.

The impact of this project on the Massa was potentially shattering. In 1955 a report by the Conseil Supérieur des Recherches Sociologiques appraising the probable effects on the peoples of the Logone Valley of this radical change stated that the Massa were extremely reluctant to accept the proposed innovations.[80] They complained that the scheme was interfering with their fishing, and it was

forcing them to drive their herds too far in search of pasture. Furthermore, they were reluctant to participate fully in a scheme which would mean changing their semi-nomadic way of life and settling down permanently to engage in year-round agriculture. They were unwilling to grow cotton, and were unenthusiastic about growing rice since they preferred their traditional diet of millet. Moreover, the Massa had no economic incentives for growing these two crops. The prices for rice and cotton in Chad in 1958 were 8 francs and 16 francs a kilo, respectively. Thus, the peasants were not interested in raising either cotton or rice commercially. By 1960, only a few Massa had settled on the reclaimed land. This failure may have been avoided if sociological factors were studied before the project was begun. Then many of the social constraints to change and development may have been identified.

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